Specification for Safe Working in the Vicinity of National Grid High Pressure Gas Pipelines and Associated Installations

Requirements for Third Parties
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**Emergency Telephone number:**

**0800 111 999***

*All calls are recorded and may be monitored*
Foreword

This Specification was approved by the UKD Policy Manager – Transmission, on 19th December 2005 for use by managers, engineers and supervisors throughout National Grid.

National Grid documents are revised, when necessary, by the issue of new editions. Users should ensure that they are in possession of the latest edition.

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

Comments

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

Safety and Engineering Registrar
SHE Directorate
National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

Key changes (Identify the changes from the previous version of this document)

This document supersedes the previous version and all references to Transco have been replaced by reference to National Grid.

<table>
<thead>
<tr>
<th>Section</th>
<th>Amendments</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>The document has been updated to reflect National Grid as company name.</td>
</tr>
<tr>
<td>1 Scope</td>
<td>The principles of the document can now be used for 2-7 bar pipelines.</td>
</tr>
<tr>
<td>6 Excavation</td>
<td>Addition of diagram to clarify requirements.</td>
</tr>
<tr>
<td>7 Construction Traffic</td>
<td>Addition of diagram to clarify requirements.</td>
</tr>
<tr>
<td>8.2 Changes to Depth of Cover</td>
<td>Section extended to include reduction in cover, as well as increase in cover.</td>
</tr>
<tr>
<td>Throughout document</td>
<td>Restrictions are applicable to all powered machinery, not just excavating equipment.</td>
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</table>
Disclaimer

This document is provided for use by National Grid and such of its contractors as are obliged by the terms and conditions 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 this document is correctly applied.

Mandatory and non-mandatory requirements

In this document:
shall: indicates a mandatory requirement.
should: indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment shall be completed to show that the alternative method delivers the same, or better, level of protection.

National Grid plc announced on Monday 10th October 2005 that its principal businesses will now operate under one unifying name, National Grid. This completes the renaming programme initiated at the company’s AGM in July 2005, when shareholders approved the group name change.

<table>
<thead>
<tr>
<th>Previous Registered Name</th>
<th>New Registered Name</th>
<th>Trading as</th>
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<tbody>
<tr>
<td>National Grid Transco plc</td>
<td>National Grid plc</td>
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<tr>
<td>Transco plc</td>
<td>National Grid Gas plc</td>
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Specification for Safe Working In The Vicinity Of National Grid High Pressure Gas Pipelines And Associated Installations – Requirements For Third Parties

Introduction

This specification is for issue to third parties carrying out work in the vicinity of National Grid high pressure gas pipelines (above 7 bar gauge) and associated installations and is provided to ensure that individuals planning and undertaking work take appropriate measures to prevent damage.

Any damage to a high-pressure gas pipeline or its coating can affect its integrity and can result in failure of the pipeline with potential serious hazardous consequences for individuals located in the vicinity of the pipeline if it were to fail. It is therefore essential that the procedures outlined in this document are complied with when working near to a high pressure, above 7 bar gauge, pipeline. If any work is considered by National Grid to be in breach of the requirements stipulated in this document then the National Grid responsible person will suspend the work until the non-compliances have been rectified.

The Pipelines Safety Regulations state that “No person shall cause such damage to a pipeline as may give rise to a danger to persons” (Regulation 15). Failing to comply with these requirements could therefore also result in prosecution by the Health and Safety Executive (HSE).

The requirements in this document are in line with the requirements of the IGE (Institution of Gas Engineers) recommendations IGE/SR/18 Edition 2 - Safe Working Practices To Ensure The Integrity Of Gas Pipelines And Associated Installations and the HSE’s guidance document HS(G)47 Avoiding Danger from Underground Services.

It is the responsibility of the third party to ensure that any work carried out also conforms with the requirements of the Construction and Design Management Regulations and all other relevant health and safety legislation.
When carrying out work in the vicinity of a high pressure pipeline follow the following process

**CONTACT NATIONAL GRID**
Contact National Grid to obtain formal consent - Section 2 of this document.

*Note:* at least 7 days notice prior to commencement of the work is normally required

**CONSIDER SAFETY**
Consider the safety requirements - Section 3 of this document.

**INFORM NATIONAL GRID AND REQUEST PIPELINE LOCATION**
Inform National Grid prior to carrying out work and arrange for National Grid to locate the pipeline - Section 4 of this document.

*Note:* at least 7 days notice is normally required

**OBSERVE RESTRICTIONS**
Observe National Grid restrictions on the allowed proximity of mechanical excavators and other power tools and the measures to protect the pipeline from construction vehicles when carrying out the work – Sections 5, 6 and 7 of this document.

*Note:* National Grid may wish to supervise the work, consult National Grid to confirm whether or not this is the case.

**SPECIFIC ACTIVITIES**
If work involves any of the following activities:

- No-Dig Techniques
- Change in Cover
- Piling
- Seismic Surveys
- Hot Work
- Blasting
- Demolition
- Surface Mineral Extraction
- Landfilling
- Pressure Testing
- Deep Mining

Comply with the requirements in Section 8 of this document

**CONSULT NATIONAL GRID**
Consult National Grid prior to any backfilling over, alongside or under the pipeline and obtain National Grid’s agreement to proceed. Normally National Grid require 48 hours notice prior to backfilling - Section 9 of this document.

**IMPORTANT:** This flowchart should be used in conjunction with the entire SSW22 document and not in isolation, AND If at any time during the works the pipeline is damaged even slightly then observe the precautions in Section 10 of this document.

**IF IN DOUBT CONTACT NATIONAL GRID**
1 Scope

This specification sets out the safety precautions and other conditions affecting the design, construction and maintenance of services, structures and other works in the vicinity of National Grid pipelines and associated installations operating at pressures greater than 7 bar gauge, located in both negotiated easements (see Section 12) and public highways.

The principles of this document should also be observed when carrying out work in the vicinity of intermediate pressure mains (pipelines operating between 2 and 7 bar gauge). In some circumstances some of the requirements of the document, when applied to intermediate pressure mains, may be relaxed but only with the prior agreement of National Grid.

2 Formal consent

High pressure pipelines are generally laid across country within an easement agreed with the landowner or within the highway.

As the required arrangements for working within an easement and working within the highway differ, this document has been structured to highlight the specific requirements for these two types of area where work may be carried out.

In Scotland a ‘Deed of Servitude’, known generally as a ‘wayleave’ is considered equivalent to ‘easement’ in this document.

Generally, normal agricultural activities are not considered to affect the integrity of the pipeline, however consult National Grid prior to undertaking deep cultivation in excess of 0.5 m.

In all other cases no work shall be undertaken in the vicinity of the pipeline without the formal written consent of National Grid.

Any documents handed to contractors, or other individuals undertaking work (e.g. farmer, local authority etc), on site by National Grid, shall be signed for by the site manager. National Grid will record a list of these documents using the form in Appendix A, and the contractor or other individuals undertaking work should maintain a duplicate list.
2.1 Within an Easement
The promoter of any works (see Section 12) within an easement shall provide National Grid with details of the proposed works including a method statement of how the work is intended to be carried out.

Work shall not go ahead until formal written consent has been given by National Grid. This will include details of National Grid’s protection requirements, contact telephone numbers and the emergency telephone number.

On acceptance of National Grid’s requirements the promoter of the works shall give National Grid 7 working days notice, or shorter only if agreed with National Grid, before commencing work on site.

2.2 Within the Highway
Work shall be notified to National Grid in accordance with the requirements of The New Roads and Street Works Act (NRSWA) and HS(G)47.

The promoter of any works within the highway should provide National Grid with details of the proposed works including a method statement of how the work is intended to be carried out. This should be submitted 7 working days before the planned work is to be carried out, or shorter only if agreed with National Grid. If similar works are being carried out at a number of locations in close proximity a single method statement should be adequate.

Work should not go ahead until formal written consent has been given by National Grid. This will include details of National Grid’s protection requirements, contact telephone numbers and the emergency telephone number.
3 HS&E considerations

3.1 Safe Control of Operations
All working practices shall be agreed by National Grid prior to work commencing. All personnel working on site shall be made aware of the potential hazard of the pipeline and the actions they should follow in case of an emergency. The Site Document Control Form (Appendix A) should be used to record the list of relevant documents that have been provided by National Grid to persons undertaking work at the site.

3.2 Deep Excavations
Special consideration should be given to the hazards associated with deep excavations. The HSE document CIS08 ‘Safety in Excavations’ provides further guidance and is available on the HSE web site www.hse.gov.uk

3.3 Positioning of Plant
Mechanical excavators and any other powered mechanical plant shall not be sited or moved above the pipeline unless written authority has been given by the National Grid responsible person.

Mechanical excavators and any other powered mechanical plant shall not dig on one side of the pipeline with the cab of the excavator positioned on the other side.

Mechanical excavators, any other powered mechanical plant, and other traffic shall be positioned far enough away from the pipeline trench to prevent trench wall collapse.

3.4 General
Activities associated with working in the vicinity of pipelines operating above 7 bar gauge may have impact on the safety of the general public, site workers, National Grid staff and contractors, and may affect the local environment. Anyone (e.g. contractors, site workers, farmers, local authorities etc.) working close to the pipeline 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.
4. Pipeline locating

Where formal consent to work has been given, the third party should give 7 working days notice or shorter, only if agreed with National Grid, to ensure that the pipeline is suitably located and marked out by National Grid prior to the work commencing.

Prior to work commencing on site the pipeline shall be located and pegged or suitably marked out by National Grid personnel. In exceptional circumstances and only with the prior agreement of National Grid the locating and marking out of the pipeline could be carried out by competent third parties on behalf of the contractor/site workers/farmers/local authorities etc. as long as National Grid is assured of their competence and the procedures to be followed.

Safe digging practices, in accordance with HSE publication HS(G)47 should be followed as both direct and consequential damage to gas plant can be dangerous both to employees and to the general public.

Previously agreed working practices should be reviewed and revised based on current site conditions. Any changes shall be agreed by the National Grid responsible person.

The requirements for trial holes to locate the pipeline or determine levels at crossing points shall be determined on site by the National Grid responsible person.

The excavation of all trial holes shall be supervised by the National Grid responsible person.
5 Slabbing and other protective measures

No protective measures including the installation of concrete slab protection shall be installed over or near to the National Grid pipeline without the prior permission of National Grid. National Grid will need to agree the material, the dimensions and method of installation of the proposed protective measure. The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Grid.

Where permanent slab protection is to be applied over the pipeline National Grid will normally carry out a survey (Pearson Survey) of the pipeline to check that there is no existing damage to the coating of the pipeline prior to the slab protection being put in place. National Grid shall therefore be given suitable advance notice (typically 7 working days) prior to the laying of any slab protection to arrange for them to carry out this survey.

The Safety precautions detailed in Sections 3 and 6 of this document should also be observed during the installation of the pipeline protection.
6 Excavation

6.1 In Proximity to a Pipeline in an Easement

Third parties may excavate, unsupervised, with powered mechanical plant no closer than 3 metres to the National Grid located pipeline and with hand held power tools no closer than 1.5 metres - see Figure 1. Powered mechanical plant includes mechanical excavators, whilst hand power tools includes petrol, electric and air powered tools. Due to the potential of toothed excavator buckets to damage pipelines, toothless buckets shall be used. Any fitting, attachment or connecting pipework on the pipeline shall be exposed by hand. All other excavation shall be by hand.

Consideration may be given to a relaxation of these limits by agreement with the National Grid responsible person on site and only whilst he remains on site. In this case powered mechanical plant shall not be allowed to excavate closer than 0.6 metres to the nearest part of the pipeline.

Where sufficient depth of cover exists, following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 0.25 metres, using a toothless bucket.

No topsoil or other materials shall be stored within the easement without the written permission of National Grid.

Figure 1. Excavation Restrictions

0.3m = Limit for removal of bituminous or concrete by mechanical means
Note: NO chain trenchers allowed within 3m horizontally

0.25m = Limit for removal of topsoil with light tracked vehicle and toothless bucket – only where sufficient depth of cover exists

Distance will vary dependent on pipeline burial depth

1.5 metres
No power tools

3.0 metres
No powered mechanical plant, such as mechanical excavators

0.3m = Limit for removal of bituminous or concrete by mechanical means
Note: NO chain trenchers allowed within 3m horizontally

0.25m = Limit for removal of topsoil with light tracked vehicle and toothless bucket – only where sufficient depth of cover exists

Distance will vary dependent on pipeline burial depth

1.5 metres
No power tools

3.0 metres
No powered mechanical plant, such as mechanical excavators

Figure 1. Excavation Restrictions
No topsoil or materials shall be stored over the pipeline without the written permission of National Grid.

No fires shall be allowed in the easement strip or close to above ground gas installations.

After the completion of the work the level of cover over the pipeline should be the same as that prior to work commencing unless agreed otherwise with the National Grid responsible person.

No new service shall be laid parallel to the pipeline within the easement. In special circumstances, and only with formal written agreement from National Grid, this may be relaxed for short excursions where the service shall be laid no closer than 0.6 metres to the side of the pipeline.

Where work is being carried out parallel to the pipeline within or just alongside the easement a post and wire fence shall be erected as a protective barrier between the works and the pipeline.

National Grid may require that an easement crossing agreement (deed of indemnity) be completed by the third party prior to the commencement of work. This shall be discussed with the National Grid responsible person prior to the commencement of the works.

6.2 In Proximity to a Pipeline in the Highway

Removal of the bituminous or concrete highway surface layer by mechanical means is permitted to a depth of 0.3 metres, although the use of chain trenchers to do this should not be permitted within 3 metres of the pipeline. The National Grid responsible person may want to monitor this work.

Where the bituminous or concrete highway surface layer extends below 0.3 metres deep it should only be removed by handheld power assisted tools under the supervision of the National Grid responsible person. In exceptional circumstances, and following a risk assessment, these conditions may be relaxed by the National Grid responsible person.

Third parties may excavate, unsupervised, with powered plant mechanical plant no closer than 3 metres to the located National Grid pipeline and with hand held power tools no closer than 1.5 metres. Any fitting or attachment shall be exposed by hand.
In special circumstances consideration may be given to a relaxation of these rules by agreement with the National Grid responsible person on site and only whilst he remains on site.

The use of ‘No dig’ techniques is covered in Section 8.1.

Any new service running parallel to the pipeline should be laid no closer than 0.6 metres to the side of the pipeline (see Section 6.4).

6.3 Crossing Over a Pipeline
Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service shall cross below the pipeline with a clearance distance of 0.6 metres.

In special circumstances this distance may be reduced at the discretion of the National Grid responsible person on site.

6.4 Crossing Below a Pipeline
Where a service is to cross below the pipeline a clearance distance of 0.6 metres between the crown of the service and underside of the pipeline shall be maintained.

The exposed pipeline should be suitably supported. Where lengths of pipeline greater than 5 metres are to be exposed and unsupported the National Grid responsible person shall be consulted and a stress analysis shall be required in order to establish support requirements. The stress analysis shall be carried out by individuals with demonstrated expertise in this area, National Grid can be consulted for advice on suitable specialists. National Grid may request a copy of the stress analysis to confirm its adequacy. Such supports shall be removed prior to backfilling.

The exposed pipeline/s shall be protected by matting and suitable timber cladding.
6.5 Cathodic Protection
Cathodic Protection is applied to all of National Grid’s above 7 bar gauge buried steel pipelines 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 similarly protected, National Grid will undertake interference tests to determine whether the new service is interfering with the cathodic protection of the National Grid pipeline.

Should any cathodic protection posts or associated apparatus need moving to facilitate third party works, reasonable notice, typically 7 days, shall be given to National Grid. National Grid will undertake this work and any associated costs will be borne by the third party.

6.6 Installation of Electrical Equipment
Where electrical equipment is being installed close to National Grid’s above 7 bar gauge buried steel pipelines, 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 National Grid for their approval, prior to the works.
7 Construction traffic

Where existing roads cannot be used construction traffic should ONLY cross the pipeline at previously agreed locations. All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for a distance of 6 metres. The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. The third party shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required. The type of raft shall be agreed with National Grid prior to installation.

Figure 2. Construction Traffic Requirements
8 Specific activities

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of the pipeline. Consult National Grid 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 pipeline.

The table below shows, for some specific activities, the prescribed distances within which the advice of National Grid shall be sought (see Sections 8.1 to 8.11 for further details):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Distance within which National Grid advice shall be sought</th>
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<tr>
<td>Piling</td>
<td>15 m</td>
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<tr>
<td>Surface Mineral Extraction</td>
<td>100 m</td>
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<tr>
<td>Landfilling</td>
<td>100 m</td>
</tr>
<tr>
<td>Demolition</td>
<td>150 m</td>
</tr>
<tr>
<td>Blasting</td>
<td>250 m</td>
</tr>
<tr>
<td>Deep Mining</td>
<td>1000 m</td>
</tr>
</tbody>
</table>

8.1 No-Dig Techniques

Where the third party (e.g. contractor, farmer, local authority, site worker etc.) intends using no dig techniques then a formal method statement shall be produced for all work that would encroach (either above or below ground) within the pipeline easement. This method statement shall be formally agreed with National Grid prior to the commencement of the work. National Grid may wish to be present when the work is being carried out and shall therefore be given adequate advance notice before the commencement of the work.

8.2 Changes to Depth of Cover

8.2.1 Increase in Cover

A pipeline integrity assessment shall be provided for situations involving a final cover depth exceeding 2.5 metres. This assessment should take due account of soil ‘dead’ loading, ground settlement due to earthworks and the impact of the increased cover on National Grid’s ability to inspect and maintain the pipeline. Embankment design and construction over pipelines shall give consideration to prevention of any instability. Expert advice may need to be sought which can be arranged through National Grid.
8.2.2 Reduction in Cover
National Grid shall be consulted for any activity that will lead to a reduced depth of cover (greater than 0.1m) over the pipeline. Expert advice may need to be sought which can be arranged through National Grid.

8.3 Piling
No piling shall be allowed within 15 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline shall be limited to a maximum level of 75 mm/sec. Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration shall be monitored by the contractor and the results available to the National Grid Responsible person at their request. A typical monitoring device would be the Vibrock V801 seismograph and tri-axial geophone sensor.

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 pipeline shall be made.

Expert advice may need to be sought which can be arranged through National Grid.

8.4 Demolition
No demolition should be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline shall be limited to a maximum level of 75 mm/sec. Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration shall be monitored by the contractor and the results available to the National Grid Responsible person at their request.

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

Expert advice may need to be sought which can be arranged through National Grid.

8.5 Blasting
No blasting should be allowed within 250 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline shall be limited to a maximum level of 75 mm/sec. Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration shall be monitored by the individual/company undertaking the work and the results available to the National Grid Responsible person at their request.
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 pipeline shall be made.

Expert advice may need to be sought which can be arranged through National Grid.

### 8.6 Surface Mineral Extraction

An assessment shall be carried out on the effect of surface mineral extraction activity within 100 metres of a pipeline. Consideration should also be given to extraction around groundbeds and other pipeline associated plant and equipment.

Where the mineral extraction extends up to the pipeline easement, a stable slope angle and stand-off distance between the pipeline and slope crest shall be determined by National Grid. The easement 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 pipeline easement 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 easement, 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 pipeline but do not extend up to the pipeline easement boundary, an assessment, by National Grid shall be made on whether the planned activity could promote instability in the vicinity of the pipeline. This may occur where the 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 8.5 apply.
8.7 Deep Mining
Pipelines routed within 1 km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance, which can be arranged through National Grid.

8.8 Landfilling
The creation of slopes outside of the pipeline easements may promote instability within the vicinity of the pipeline. An assessment should therefore be carried out, by National Grid, on the effect of any landfilling activity within 100 metres of a pipeline. The assessment is particularly important if landfilling operations are taking place on a slope in which the pipeline is routed.

8.9 Pressure Testing
Hydraulic testing of a third party pipeline should not be permitted within 6 metres either side of a National Grid pipeline, to provide protection against the effects of a burst.

Where this cannot be achieved, typically where the third party pipeline needs to cross a National Grid pipeline, one of the following precautions would need to be adopted:

a) limiting of the design factor of the third party pipeline to 0.3 at the pipeline’s nominated maximum operating pressure (MOP), and the use of pre-tested pipe.

or

b) the use of sleeving.

In either case, the third party shall submit details of their proposed precautions and method statement for National Grid consideration.

8.10 Seismic Surveys
National Grid shall be advised of any seismic surveying work in the vicinity of pipeline that will result in National Grid’s pipeline being subjected to peak particle velocities in excess of 50 mm/sec. The ground vibration near to the pipeline shall also be monitored by the contractor whilst the survey work is being carried out. Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration should be monitored by the contractor and the results available to the National Grid Responsible person at their request.

8.11 Hot Work
The National Grid responsible person on site should supervise all welding, burning or other ‘hot work’ that takes place within the easement.
9 Backfilling

Individuals/Contractors/companies/organisations undertaking work shall provide National Grid with 48 hours notice, or shorter notice only if agreed with National Grid, of the intent to backfill over, under or alongside the pipeline. This requirement should also apply to any backfilling operations alongside the pipeline within 3 metres of the pipeline. Any damage to the pipeline or coating shall be reported to the National Grid responsible person in order that damage can be assessed and repairs can be carried out.

**Minor damage to pipe coating and test leads should be repaired by National Grid free of charge.**

No backfilling should be undertaken without National Grid agreement to proceed. The National Grid responsible person will stipulate the necessary consolidation requirements.

If the pipeline has been backfilled without the knowledge of the National Grid responsible person then he will require the material to be re-excavated in order to enable the condition of the pipeline coating to be confirmed.
10 Action in the case of damage to the pipeline

If the National Grid pipeline is damaged, even slightly, and even if no gas leak has occurred then the following precautions shall be taken immediately:-

- Shut down all plant and machinery and extinguish any potential sources of ignition.
- Evacuate all personnel from the vicinity of the pipeline.
- Notify National Grid using the free 24 hour emergency telephone number 0800 111 999*
- Notify the National Grid responsible person or his office immediately using the contact telephone number provided.
- Ensure no one approaches the pipeline.
- Do not try to stop any leaking gas.

* All calls are recorded and may be monitored
11 References

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
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<tr>
<td>NRSWA</td>
<td>New Roads &amp; Street Works Act</td>
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<td>HS(G)47</td>
<td>HSE Guidance ‘Avoiding Danger from Underground Services’</td>
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<tr>
<td>IGE/SR/18</td>
<td>Safe Working Practices to Ensure the Integrity of Gas Pipelines and Associated Installations (Institution of Gas Engineers)</td>
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<tr>
<td>CIS08</td>
<td>Safety in Excavations (HSE document – see HSE website <a href="http://www.hse.gov.uk">www.hse.gov.uk</a>)</td>
</tr>
</tbody>
</table>
Deed of Servitude: In Scotland a ‘Deed of Servitude’ is considered equivalent to ‘easement’ in this document.

Easement: Easements are negotiated legal entitlements between National Grid and landowner and allow National Grid to lay, operate and maintain pipelines within the easement strip. Easement strips may vary in width typically between 6 and 25 metres depending on the diameter and pressure of the pipeline. Consult National Grid for details of the extent of the easement strip where work is intended.

Liquefaction: Liquefaction is a phenomenon in which the strength and stiffness of the soil is reduced by earthquake shaking or other rapid loading. Liquefaction occurs in saturated soils, that is, soils in which the space between individual particles is completely filled with water. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support pipelines or other components is reduced.

Pearson Survey: A survey used for locating coating defects on buried pipeline services.

Promoter of new works: The person or persons, firm, company or authority for whom new services, structures or other works in the vicinity of existing National Grid pipelines and associated installations operating above 7 bar gauge are being undertaken.

National Grid responsible person: The person or persons appointed by National Grid with the competencies required to act as the National Grid representative for the purpose of managing the particular activity

Wayleave: General term which is considered equivalent to ‘easement’ in this document.
**EMERGENCY TELEPHONE NO.**
0800 111 999*

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**SITE DOCUMENT CONTROL FORM**

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<td>SITE MANAGER:</td>
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</tr>
<tr>
<td>NATIONAL GRID CONTACT:</td>
<td></td>
</tr>
</tbody>
</table>

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**THE FOLLOWING DOCUMENTS WERE ISSUED TO**

*(INDIVIDUAL’S NAME) OF (COMPANY NAME AND ADDRESS)*

**BY (NATIONAL GRID REPRESENTATIVE) ON (DATE)**

**DOCUMENTS:** *(LIST OF DOCUMENTS)*

---

**Signed:** *(by the recipient)*

**Date of signature:*

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* All calls are recorded and may be monitored
<table>
<thead>
<tr>
<th>Site Document Control Form</th>
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<tbody>
<tr>
<td>EMERGENCY TELEPHONE NO.</td>
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<tr>
<td>0800 111 999*</td>
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<tr>
<td>NATIONAL GRID</td>
</tr>
</tbody>
</table>

| ACTIVITY REFERENCE:       |
|                         |
| ACTIVITY LOCATION:       |
|                         |
| SITE MANAGER:            |
|                         |
| NATIONAL GRID CONTACT:   |
|                         |

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BY

ON (DATE)

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National Grid contact details: