PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK IN THE VICINITY OF UNDERGROUND GAS PIPES

ADVICE TO SITE PERSONNEL

MANAGEMENT NOTE

Please ensure that a copy of this note is read by your site management and to your site operatives.

Early consultation with ESP Utilities Group prior to excavation is recommended to obtain the location of plant and precautions to be taken when working nearby.

This Guidance Note should be read in conjunction with the Health and Safety Executive guidance HSG47 "Avoiding danger from underground services".

Introduction

Damage to ESP Utilities Group's plant can result in uncontrolled gas escapes which may be dangerous. In addition, these occurrences can cause expense, disruption of work and inconvenience to the public.

Various materials are used for gas mains and services. Cast Iron, Ductile Iron, Steel and Plastic pipes are the most widely found. Modern Plastic pipes are either bright yellow or orange in colour.

Cast Iron and Ductile Iron water pipes are very similar in appearance to Cast Iron and Ductile Iron gas pipes and if any Cast Iron or Ductile Iron pipe is uncovered, it should be treated as a gas pipe. ESP Utilities Group do not own any Cast Iron or Ductile Iron gas pipes but their gas network infrastructure may be connected to Cast Iron, Ductile Iron or Steel pipes owned by a regional gas distribution network, either Cadent Gas, Northern Gas Networks, Wales and West Utilities or SGN.

The following general precautions apply to *Intermediate Pressure (2-7barg MOP), Medium Pressure (75mbarg-2barg MOP), Low Pressure (up to 75mbarg MOP) and other gas mains and services likely to be encountered in general site works and are referred to within this document as '**pipes**'.

*Whenever an IP main has been confirmed to be present following a plant enquiry, the enquirer MUST NOT continue with work until contact is made with ESP and the work discussed in detail. This may result in on site attendance during the work by an ESP representative. It may be necessary for ESP to attend site in relation to potential works on other pressure tiers of pipes depending on the level of risk associated with the works.

Locating Gas Pipes

It should be assumed when working in urban and residential areas that gas mains and services are likely to be present. On request, ESP Utilities Group will give approximate locations of pipes derived from their records. The records do not always show the position of gas service pipes as they are not a regulatory requirement, but their probable line can be deduced from the gas meter position. ESP Utilities Group staff will be pleased to assist in the location of gas plant and provide advice on any precautions that may be required. The records and advice are given in good faith but cannot be guaranteed until manual excavation has taken place to positively identify the location of ESP plant. Proprietary pipe and cable locators are available and should be used to detect underground plant wherever possible although generally these will not locate plastic pipes.

Safe working Practices

To ensure safe working conditions adjacent to gas plant the following must be observed:

- Observe any specific request made by ESP Utilities Group staff or Gas Emergency Provider personnel
- Gas pipes must be located by hand digging before mechanical excavation is undertaken.
- Once a gas pipe has been located, mechanical excavation must proceed **with care**. A mechanical excavator **must not** in any instance be used within 0.5 metres of a gas pipe and greater safety distances may be advised by ESP Utilities Group depending on the mains maximum operating pressure (MOP).
- **No apparatus or plant must be laid over and along the line of a gas pipe, irrespective of clearance.**
- Where heavy plant may have to cross the line of a gas pipe during construction work, the number of crossing points should be kept to a minimum. Crossing points should be clearly indicated and crossings at other places along the line of the pipe should be prevented. Where the pipe is not adequately protected by an existing road, crossing points should be suitably reinforced with sleepers, steel plates or a specially constructed reinforced concrete raft as necessary. ESP Utilities Group staff will advise on the type of reinforcement necessary.
- No explosives should be used within 30 metres of any gas pipe without prior consultation and the agreement of ESP Utilities Group.
- **ESP Utilities Group must be consulted prior to carrying out excavation work within 10 metres of any above ground gas installation.** ESP Utilities Group above ground installations will have a sign with a site number; please quote this site number in any correspondence.
- Where it is proposed to carry out piling or boring within 15 metres of any gas pipe, ESP Utilities Group should be consulted prior to the commencement of the works.

- Access to gas plant must be maintained at all times during on site works.

Proximity of Other Plant

- For gas pipes operating at a pressure a pressure of up to 2bar (Low Pressure and Medium Pressure) other utility plant or apparatus must not be installed within 250mm of the gas pipe.
- For gas pipes operating in excess of 2 bar (Intermediate Pressure) other utility plant or apparatus must not be installed within 600mm of the gas pipe.
- These minimum proximities are required in to facilitate repair, whether the adjacent plant be parallel to or crossing the gas pipe.
- No manhole or chambers shall be built over or around a gas pipe and no work should be carried out which results in a reduction of cover or protection over a gas pipe, without consultation with ESP Utilities Group.

Support and Backfill

Where excavation of trenches adjacent to any pipe affects its support, the pipe must be supported to the satisfaction of ESP Utilities Group and must not be used as an anchor or support in any way. In some cases, it may be necessary to divert the gas pipe before work commences.

Where a trench is excavated crossing or parallel to the line of the gas pipe, the backfill should be adequately compacted, particularly beneath the pipe, to prevent any settlement which could subsequently cause damage to the pipe.

In special cases it may be necessary to provide permanent support to the gas pipe, before backfilling and reinstatement is carried out. Backfill material adjacent to gas plant must be selected fine material or sand, containing no stones, bricks or lumps of concrete, etc., placed to a minimum depth of 150mm around the pipes and well compacted by hand. No power compaction should take place until 300 mm of selected fine fill has been suitably compacted.

If the road construction is in close proximity to the top of the gas pipe, a "cushion" of selected fine material such as sand must be used to prevent the traffic shock being transmitted to the gas pipe. The road construction depth must not be reduced without permission from the local Highway Authority.

No concrete or other hard material must be placed or left under or adjacent to any Cast Iron pipe as this may cause fracture of the pipe at a later date.

Concrete backfill should not be used closer than 300 mm to the pipe.

Damage to Coating

Where a gas pipe is coated with special wrapping and this is damaged, even to a minor extent ESP Utilities Group must be notified so that repairs can be made to prevent future corrosion and subsequent leakage.

Welding or "Hot Works"

When welding or other "hot works" involving naked flames are to be carried out in close proximity to ESP Utilities Group gas plant and the presence of gas is suspected, ESP Utilities Group must be contacted before work commences to check the atmosphere. Even when a gas free atmosphere exists care must be taken when carrying out hot works in close proximity to gas plant in order to ensure that no damage occurs. Suitable method statements and risk assessments should be undertaken.

Particular care must be taken to avoid damage by heat or naked flame to plastic gas pipes or to the protective coating on other gas pipes. When works on copper pipes are undertaken near to other metallic gas pipes, care should be taken to avoid flux coming into contact with other metallic pipework to prevent accelerated corrosion which can lead to leakage.

Leakage from Gas Apparatus

If damage or leakage is caused or an escape of gas is smelt or suspected the following action **must** be taken at once:

- Remove all personnel from the immediate vicinity of the escape;
- Contact National Gas Emergency Number, on: **0800 111 999**;
- Prevent any approach by the public, prohibit smoking, extinguish all naked flames or other source of ignition within 15 metres from the gas leak as a minimum;
- Assist gas personnel, Police or Fire Service as requested.

REMEMBER – IF IN DOUBT, SEEK ADVICE FROM ESP UTILITIES GROUP.

ESP Utilities Group can be contacted at:

Office Address: Bluebird House, Mole Business Park, Leatherhead, Surrey KT22 7BA

Office Tel: 01372 587500; Fax: 01372 377996