



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

## **Gas Safety Committee**

**Annual Report 2005**

**CER/06/122**

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## **Introduction**

The Gas Safety Committee (“GSC”), in accordance with Section 4 of its Terms of Reference (see Appendix 1), is required to produce an annual report on its activities for the previous year.

This is the second such report of the GSC, it having been established in March 2004. This is presented to the Commission for Energy Regulation (“the Commission”) and members of the GSC. The report is also published on the Commission’s website for the perusal of interested parties.

## **Background**

The Commission assumed the responsibilities and functions for the regulation of the Irish onshore natural gas market under the Gas (Interim) (Regulation) Act, 2002 (“the Act”). Under the Act, the Commission and the Minister for Communications, Marine and Natural Resources are both required to have regard to the need to promote safety and efficiency on the part of natural gas undertakings.

To date, the regulatory framework for natural gas safety in Ireland has been successfully managed. However, as the market changes (through the introduction of competition with regard to the supply and transportation of gas), it is recognised that there is a clear need to revisit the framework and ensure that an appropriate regulatory regime is put in place for the new market structure.

The issue of gas safety regulation is becoming increasingly important, as the threshold for eligible customers has been gradually lowered and the introduction of full retail competition approaches (expected 2006). Increasing numbers of market participants will need to know and understand their safety obligations within a new regulatory framework for the natural gas market.

The Act transferred to the Commission certain powers to act as the independent regulator for the natural gas industry. In enacting the legislation, the Government signalled its intention to introduce a new legal and regulatory framework for the gas industry with responsibility for the framework vested in the Commission. However, whilst this gas regulatory framework incorporates safety and technical issues, it primarily concentrates on issues of economic regulation

It should be noted that the Commission’s current obligations (under Section 9(4)(d) of the Electricity Regulation Act 1999 (as amended)) to have regard, when carrying out its duties (under Section 9(3)), to the need to promote safety and efficiency on the part of gas (and electricity) undertakings is not an express function to ensure gas safety in its own right.

The Department and the Commission are currently engaged in the preparation of new gas safety legislation<sup>1</sup>. This is expected to be finalised

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<sup>1</sup> The DCMNR published its consultation on its proposals for a Natural Gas Safety Bill in November 2004. The Commission published its Vision for the implementation of the framework proposed in the DCMNR’s consultation in November 2004 (Reference CER/04/355).

early in 2006 and is expected to result in the appointment of the Commission as the natural gas safety regulator with appropriate powers to carry out that function in full.

### **Establishment of Committee**

A Gas Safety Committee had been set up under the previous regulatory regime where the Department had exclusive responsibility for natural Gas Safety. However, with the transfer of certain functions to the Commission, this Committee ceased to operate.

It is in the context of the changes in the gas market as described previously and the functions assigned to it under the Act, the Commission sought to establish a Gas Safety Committee.

Further to the above, and following a meeting with Bord Gáis Éireann (“BGE”) and the UK’s Council for the Registration of Gas Installers (“CORGI”) on 18<sup>th</sup> December 2003 to discuss the registration of gas installers under proposed forthcoming legislation, and a meeting with BGE on 12<sup>th</sup> January 2004 to discuss the recent Glendoher Estate (Rathfarnham) incident, where a gas explosion followed a mains fracture, the Commission decided to establish a formal Gas Safety Committee.

The GSC held its inaugural meeting on 16<sup>th</sup> March 2004 under the chairmanship of Dr. Tom McManus, the recently retired Chief Technical Adviser in the Department of Communications, Marine and Natural Resources. Meetings have been held quarterly since.

### ***Terms of Reference***

The GSC’s Terms of Reference are included as an Appendix to this report (see Appendix 1 – document reference GSC-04-08). Broadly, the responsibilities of the GSC centre on the safe transmission, distribution, and utilisation of natural gas.

### ***Membership***

Dr. McManus was confirmed as Chairman on 16<sup>th</sup> June 2004. Other members of the GSC comprise the relevant personnel drawn from the Commission and BGE (Bord Gáis Distribution (“BGD”) and Bord Gáis Transmission (“BGT”)).

The GSC invites other parties to its meetings as and when the Committee considers appropriate.

## GSC Meetings in 2005

The GSC held four formal meetings in 2005: 13<sup>th</sup> January, 14<sup>th</sup> April and 1<sup>st</sup> September and 1<sup>st</sup> December.

Attendance at these meetings was as follows:

<i>Role</i>	<i>Name</i>	<i>Meeting Attendance</i>
Chairperson	Dr. Tom McManus	All meetings
Commission	Eugene Coughlan	All meetings
	Aoife Crowe	13 <sup>th</sup> January
	Garrett Fitzgerald	13 <sup>th</sup> January, 14 <sup>th</sup> April
	Seán Mac an Bhaird	1 <sup>st</sup> September, 1 <sup>st</sup> December
BGE (BGD)	Rod Cooper	All meetings
	Mick Dunne	13 <sup>th</sup> January, 1 <sup>st</sup> September
	Eamonn Kelly	13 <sup>th</sup> January, 14 <sup>th</sup> April, 1 <sup>st</sup> September
	Liam Nolan	All meetings
	Gerry Keane	1 <sup>st</sup> December
	Maurice Power	13 <sup>th</sup> January, 14 <sup>th</sup> April, 1 <sup>st</sup> September
BGE (BGT)	Peter Clarke	14 <sup>th</sup> April, 1 <sup>st</sup> December
	Liam Hearne	14 <sup>th</sup> April, 1 <sup>st</sup> September, 1 <sup>st</sup> December
DCMNR	Bob Hanna	13 <sup>th</sup> January, 1 <sup>st</sup> December
Installers' review panel	Kevin Farrelly	13 <sup>th</sup> January
	Pat O'Shaughnessy	13 <sup>th</sup> January

## Activities of the GSC

The main activity of the GSC related to reviewing, and making recommendations regarding, the following activities which are of relevance to natural gas safety:

- the reporting of incidents and associated procedures;
- the causes of incidents, response by relevant parties and the implementation of agreed recommendations arising out of investigation reports and the GSC's reviews of such incidents;
- the acceleration and prioritisation of the replacement of cast iron distribution mains;
- efforts to reduce the incidence of carbon monoxide poisoning arising from the incomplete combustion of natural gas; and,
- the operation and maintenance of the gas network, including high-pressure gas transmission pipelines.

The GSC's activities are examined in further detail below;

*Incident Reporting and Implementation of Recommendations*

An agreed procedure for the reporting of incidents has been put in place. Hazardous, or potentially hazardous situations that have placed life and/or property at risk are required to be notified to the Commission.

There were six reportable incidents examined by the GSC during 2005:

Three of the incidents related to damage to gas installations caused by third parties:

- An intruder who interfered with a gas supply in a domestic kitchen caused an explosion and fire, but suffered only minor injury.
- A contractor for a communications company damaged, beyond a state of repair, a major gas distribution main in Finglas. This necessitated BGE to shut down gas supply to a wide area. All houses affected were reconnected within 48 hrs of the incident occurring, with every dwelling revisited prior to reconnection. No one was injured in this incident.
- A fire that was started in a plastic waste disposal container damaged a gas service pipe, serving four premises on an industrial estate. This caused natural gas to be released and enhancement of the fire. No one was injured in this incident.

Two of the incidents involved minor injuries to BGE employees:

- A gas valve at the Diswellstown aboveground installation (AGI) had been installed upside down at the time of the AGI construction. As such the valve position indicator, showing whether or not the valve was open or closed, was visually obscured. Due to determining incorrectly that the valve was in a closed position, a BGE operative was injured as he was unscrewing a plug on said valve, which was released under pressure.
- A gas fitter, while working outside his remit, was slightly injured while purging a newly installed service when the purged gas ignited.

The sixth incident was one involving carbon monoxide (CO) poisoning:

- The flue gas exhaust fan on a cooking appliance failed. This should have triggered an automatic shut down of the gas supply but this did not occur due to a faulty cut-off device. Hence the range was operated without a functioning flue gas exhaust fan, causing a build up of soot and flue gases. CO monoxide contained within these exhaust gases poisoned two individuals who were hospitalised but made a full recovery.

### **Third Party Damage**

Third party damage to mains occurred at a rate approaching one incident per day during 2005. While this was an 11 % improvement on 2004, it still represents one of most serious gas safety concerns, attributing to half of all reportable incidents and approximately 70 % of all gas leaks that occurred in 2005. The main initiative undertaken to address this problem in 2005 was a “Dial before you Dig” newspaper advertising campaign, which was aimed at the operators of site construction equipment and those employed by other utilities installing or repairing services, highlighting the potential of striking gas pipelines during the breaking of ground. Also a dedicated lo-call (local call cost) telephone number (1850 42 7747) has been set up to enable parties to establish whether or not there are pipelines in the vicinity of their workplace.

### **Cast Iron Mains**

BGE are currently undertaking an accelerated renewal programme that aims to replace all cast iron mains in Ireland with polyethylene (PE) mains by the end of 2009. Cast iron mains in Cork will have been completely replaced with PE pipe by early 2006. This leaves only Dublin with cast iron mains still in use in parts of the city.

All cast iron mains within the Royal and Grand Canals in Dublin have been substantially replaced. Those cast iron mains outside this central area are due to be replaced in total by 2009. Meanwhile following the Glendoher incident of November 2003, all cast iron mains in residential areas, where a scientific investigation has concluded are prone to subsidence, will be replaced as a matter of priority.

### **Carbon Monoxide**

Major progress was made during 2005 in publicising the dangers of carbon monoxide poisoning and in involving the health authorities in providing more information on detecting the symptoms of CO poisoning among those presenting at A&E departments.

A comprehensive programme of television and newspaper advertising was launched and a CO telephone help line established. Over 10,000 calls were taken during 2005 and around 500 of those calls led to measurements and investigations of possible CO exposure in the home.

Through the good offices of the Department of Health and Children, professional medical advice on the symptoms and detection of CO poisoning were circulated to all of Ireland’s A&E departments. Suitable posters are in preparation to be circulated to all family doctors and medical centres.

The only reportable incident involving CO poisoning in 2005, was that previously referred to which occurred at Mount Merrion on 2<sup>nd</sup> January 2005 and involved a faulty cut-off device installed in a gas fired cooking range. This incident has resulted in the full co-operation of the manufacturer, in locating all such gas fired cookers and in replacing the faulty cut-off control

unit with a superior unit in those of the products affected in a programme due to be completed in 2006.

The programme to eliminate gas-fired flueless water heaters in kitchens and bathrooms, which was started by BGE in 2003, continued through 2005. Such heaters, which can result in the risk of CO poisoning when a user seals a room against “draughts” and so reduces ventilation, are being replaced by electric units or properly flued gas units.

### **Transmission Pipelines**

A detailed analysis of the results of the 2004 survey of the two sub-sea sections of the two inter-connector pipelines was presented to the CER (Dr. Tom McManus representing) and others on 31 March 2005 by J.P.Kenny Ltd, consultants to BGE.

The overall condition of the two inter-connector pipelines, the sub-sea tee and the branch pipeline to the Isle of Man is excellent. The 2004 survey was extremely detailed and involved the inspection of both pipelines in their entirety, except for some areas close inshore where it was not possible to operate the Remotely Operated Towed Vehicle. The survey undertaken in 2005 was not as intensive as that undertaken in 2004. The detailed evaluation of the results of the 2005 survey will be presented to the CER in the spring of 2006.

The GSC was represented at the annual meeting of the European Pipeline Authorities in Stavanger in May 2005 by Dr McManus and Mr Fitzgerald.

### **The Register of Gas Installers**

It is a condition of the Natural Gas Distribution Licence granted to BGE that a register of gas fitting technicians who, *‘in the Licensee’s opinion, possess the requisite qualifications, skills and experience for the safe and proper installation, commissioning, testing, repair, removal, replacement and maintenance of gas fittings’* be kept and published by the Licensee. In adherence to such, BGE have established a new registration scheme for installers, now branded as the RGI (Register of Gas Installers). To become a registered gas installer an installer must meet a set list of criteria (one of which requires the submission on an annual basis of evidence that the gas installer has sufficient insurance cover in place) and display a good safety track record. A list of all registered installers is published on BGE’s webpage. The GSC would recommend highly the utilisation of a registered gas installer for any work to be carried out on gas fittings.

### **Public Service Initiatives**

BGE in conjunction with the CER have undertaken a significant number of safety initiatives directed at specific individual gas customers and fuel users generally who may not use gas. The costs of these initiatives are borne by BGE and not by the individuals affected. The aim of this work is simple, to improve safety in areas where the Gas Safety Committee has identified a risk



but where no powers of compulsion are available to enforce measures that might otherwise be taken.

## **Plans for 2006**

Among other things, the GSC will be progressing:

- the new regulatory framework for natural gas safety to be enabled by upcoming legislation due to be published in early 2006;
- the registration, responsibilities and training of gas installers;
- an evaluation of 2006 incidents and the on-going implementation of all recommendations arising from gas safety investigation reports and the discussions at the GSC;
- the BGE cast iron mains replacement programme;
- further follow-up to the CO information initiatives;
- progression of measures to reduce the incidence of third party damage to pipelines.

## **Conclusion**

The GSC was established with its primary focus being on activities aimed at protecting life, preventing injury and minimising economic loss by means of a pro-active, precautionary and preventative approach to ensuring the safe transmission, distribution and use of natural gas.

The GSC will re-examine its role and membership once the new legislative framework for the regulation of natural gas safety has been finalised.

**Dr. T. McManus**  
**Chairperson, GSC**  
**February 2006**

## **Appendix 1 – Terms of Reference of GSC**

1. **Mission** To Protect life, to prevent injury, to minimise economic loss by means of a pro-active, precautionary and preventative approach to ensuring the safe transmission, distribution and use of natural gas.
2. **The Committee** The Gas Safety Committee shall have up to [seven] members appointed by the Energy Regulator who are knowledgeable concerning gas safety issues and representative of the organisations and authorities responsible for the transmission, distribution and use of natural gas. The Chairman shall be appointed from amongst the members by the Energy Regulator for a period of up to one year. The Chairman may have his appointment renewed at the discretion of the Energy Regulator.
3. **Meetings** The Gas Safety Committee shall determine the frequency and location of meetings. Such meetings will usually take place in Ireland with a quarterly frequency. However the Energy Regulator may summon a meeting of the Committee at any time at his discretion.
4. **Agenda & Reports** The Chairman shall circulate meeting agenda to the membership and the Energy Regulator ten days ahead of the meeting date. Committee members may propose items for the agenda up to five days ahead of a meeting. The minutes of each meeting will be circulated to members and to the Energy Regulator within two weeks of the adjournment of the meeting.

An Annual Report will also be submitted by the Committee to the Energy Regulator.

### **5. Activities and Responsibilities of Committee**

The activities and responsibilities of the Committee centre on:

- the transmission of gas
- the distribution of gas
- the end use of gas

#### **5.1 Transmission of Gas**

The main safety concern involving gas transmission relate to the danger of explosions and the cascading economic consequences arising from loss of gas supply:

- third party damage to high pressure pipelines
- corrosion of pipework arising from loss of or damage to corrosion protection systems.

- security and safety of compressor station, gas reception stations, pressure reduction stations, block valve stations and other AGI's associated with the transmission of gas.

In this area the Gas Safety Committee would monitor:

- the nature, content and frequency of transmission pipeline inspections;
- the data and findings obtained from these inspections;
- the frequency and results of emergency exercises undertaken to test responses to emergency situations;
- the effectiveness of leak detection systems;
- the gas detection and explosion prevention hardware and procedures at AGIs;
- any incidents that cause a pipeline section or an AGI or element of an AGI to be shut down or closed in response to an emergency;
- emergency communication systems and system testing;
- repairs to transmission pipelines and infrastructure.

The Gas Safety Committee would, where appropriate and relevant, make safety recommendations to the gas transmission company, the GTSC, and /or the Energy Regulator and follow up on these recommendations over subsequent Committee meetings.

## **5.2 The Distribution of Gas**

The main safety concerns involving gas distribution relate to the danger of leaks from distribution pipework and gas service pipelines leading to explosions and the consequences of these explosions:

- third party damage to pipework;
- ground movement resulting in damage to pipework;
- corrosion of pipework;
- unsafe installation or repair of pipework;
- damage to pipework by fire not due to gas;
- unsatisfactory response to report of gas leak;
- unsatisfactory investigation of gas leak; and,
- unsatisfactory classification of gas leak.

In this area the Gas Safety Committee would monitor:

- unaccounted for gas;
- public reported escapes;
- gas leak monitoring campaigns;

- frequency and characteristics of mains fractures;
- mains and services replacement programmes;
- special measures in neighbourhood of multi-storey buildings, schools, hospitals and such like;
- all incidents involving gas escapes that led to explosions, fires or evacuations;
- gas odourisation;
- mains conditioning; and,
- safety advice campaigns (TV, radio, newspapers, flyers with gas bills etc.).

The Gas Safety Committee would, where appropriate and relevant, make safety recommendations to the gas distribution companies, the GTSC, and/or the Energy Regulator and follow up on these recommendations over subsequent Committee meetings.

### **5.3 The Use of Gas**

The main safety concerns involving gas use in homes and commercial premises relate to situations leading to the inadequate combustion of gas and the potential for carbon monoxide poisoning.

There is however still the danger of explosions arising from leaks in the internal pipework and from forgetfulness where an appliance is turned on and the user becomes distracted.

- inadequately vented equipment;
- restriction of air supply;
- by-passing of safety cut-out devices by untrained installers or repairmen;
- poorly installed or untested internal pipework;
- poorly installed or untested appliance; and,
- meter tampering or by-passing.

In this area the Gas Safety Committee would monitor:

- all incidents leading to carbon monoxide poisoning or hospital admissions;
- all incidents where gas leaks cause fires, explosions, or evacuations;
- gas installer training and certification procedures;
- response procedures relating to gas leak reports (numbers on call, location, communications and technical support, leak investigation methodology)
- numbers and nature of internal reported leaks;
- equipment safety trends (flame failure devices, low oxygen monitors, carbon monoxide monitors etc.);
- publicity material concerning gas use safety;
- health authority initiatives concerning carbon monoxide poisoning;
- relevant Coroners reports; and,

- relevant gas accident reports.

The Gas Safety Committee would, where appropriate and relevant, make safety recommendations to the gas distribution companies, marketers of gas appliances, the GTSC, and/or the Energy Regulator and follow up on these recommendations over subsequent Committee meetings.

#### **5.4 International Aspects**

The Gas Safety Committee should be represented at the following international meetings:

- The Annual Meeting of the Interconnector Commission to discuss the results of the annual inspection of the two sub-sea interconnectors and plan the work of subsequent inspections.
- The Annual Meeting of the European Pipeline Authorities.

The Gas Safety Committee would also endeavour to obtain information on major gas incidents overseas that may be of relevance to Ireland.

## Appendix 2 –Listing of GSC documentation from 2005

<i>Document Title/Description</i>	<i>GSC Reference Number</i>
<b>Meeting 1 of 2005 (13/01/05)</b>	
Agenda	GSC-05-01
Minutes of Previous Meeting	GSC-05-02
Safety Statistics	GSC-05-03
DRAFT GSC Annual Report of 2004	GSC-05-04
Letter from CER to BGE re Notification of Standards	GSC-05-05
Letter from CER to BGE re Procedures for Reporting and Investigation of Gas Safety Incidents	GSC-05-06
BGE Analysis of Gas (Inch, IC1, IC2) [re Hydrogen Sulphide issue]	GSC-05-07
Note and press clipping on gas explosion in France (Mulhouse, 26/12/04)	GSC-05-08
<b>Meeting 2 of 2005 (14/04/05)</b>	
Agenda	GSC-05-09
Minutes of Previous Meeting	GSC-05-10
Safety Statistics	GSC-05-11
Final GSC Annual Report of 2004	GSC-05-12
Report of Liam O'hAlmhain on Inquest into Annville Incident	GSC-05-13
Summary of Subsea pipeline survey 2004 (TMc document)	GSC-05-14
Presentation on Subsea pipeline survey 2004 (BGT presentation)	GSC-05-15
Presentation on BGE Leak Response (ERS) (BGD presentation)	GSC-05-16
<b>Meeting 3 of 2005 (1/09/05)</b>	
Agenda	GSC-05-17
Minutes of Previous Meeting	GSC-05-18
Safety Statistics	GSC-05-19
Presentation from BGE on contingency plans for major on-shore/ sub-sea transmission line incident	GSC-05-20
Coroner's letter re Annville Incident	GSC-05-21
Timetable for television safety advertisements and a list of papers in which safety advertisements will be placed	GSC-05-22
Presentation from Dr. McManus on the 20 <sup>th</sup> annual meeting of European pipeline Authorities	GSC-05-23
<b>Meeting 4 of 2005 (1/12/05)</b>	
Agenda	GSC-05-24
Minutes of Previous Meeting	GSC-05-25
Burgoynes report on Corrib Lawn incident	GSC-05-26
Final incident report on Mullaghboy Industrial Estate incident	GSC-05-27
Advertisements for 'dial before you dig campaign'	GSC-05-28
CO advertisement aimed at the patients of general practitioners	GSC-05-29
Statistics relating to the CO helpline and also CO safety inspections were submitted by BGE	GSC-05-30
Safety Statistics	GSC-05-31
Overview document on crisis management exercises	GSC-05-32

