



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

## **Gas Safety Committee**

**Annual Report 2006**

**CER/07/048**

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## **Section 1 – Introduction & Background**

### **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 third report of the GSC and is now presented to the Commission for Energy Regulation (“the Commission”) and members of the GSC as a summary of activity for 2006.

### **Background**

The Commission assumed responsibility 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.

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

Broadly, the responsibilities of the GSC centre on the safe transmission, distribution and utilisation of natural gas.

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, Bord Gáis Networks (BGN) and the Department of Communications, Marine and Natural Resources. The GSC invites other parties to its meetings as and when the Committee considers appropriate<sup>1</sup>.

The Energy (Miscellaneous Provisions) Act 2006, which was signed into legislation on 24<sup>th</sup> December 2006, gives the Commission a far wider remit with respect to gas safety in the future.

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<sup>1</sup> See Appendix 2 for list of members in 2006.

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## **Section 2 – Overview of Activities in 2006**

The GSC held four formal meetings in 2006: 1<sup>st</sup> March, 13<sup>th</sup> June, 29<sup>th</sup> September and 15<sup>th</sup> December.

### **Review of Gas Safety Activity 2006**

During 2006 the GSC concentrated on the following activities:

- Reviewing all reports in relation to Irish gas safety incidents reported in 2006.
- Reviewing all recommendations made in relation to incidents reported in 2006 and any outstanding recommendations from previous years.
- Noting any trends in relation to the cause of gas safety incidents.
- Reviewing high level risk analysis in relation to trends in gas safety incidents.
- Monitoring international incidents to ensure any appropriate lessons learned are incorporated into Irish incident response.
- Contributing to the development of procedures regarding the reporting of gas safety incidents by BGN.
- Monitoring the renewal of cast iron gas distribution pipes by BGN.
- Monitoring the operation and maintenance of the gas network from a safety perspective (including high-pressure gas transmission pipelines).
- Reviewing the progress of safety publicity campaigns and their effectiveness.

### **Irish Gas Safety Incidents 2006**

During 2006 there were six incidents whose nature required review by the GSC. Five of these were reportable incidents under Article 17 of both the Gas (Amendment) Act 1987 (Section 2) Order 1987 (as amended) and the Gas (Amendment) Act 1987 (Section 2) (Distribution) Order 2003. The Committee was encouraged to note that none of the incidents involved death or serious injury to any person and all, except for one, were confined to damage to property. Of the six incidents, two were caused through third party interference during construction, two through vandalism, one through the use of incorrect procedures while working on a gas distribution pipe, and one involving carbon monoxide poisoning. The reports arising from these incidents were reviewed and their recommendations monitored by the GSC as they were implemented.

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*Vandalism at meter sites:*

During 2006 there were two incidents where meters were damaged when refuse nearby was set alight. Following these incidents the GSC explored whether there is a need or method of providing additional protection to reduce meter box vandalism.

Following this review it was recommended that meter boxes in close proximity to a traffic area should be fitted with a suitable crash barrier by Bord Gáis. It was also found that it is not possible to fully mitigate against the risk of vandalism and that current measures requiring meter boxes to be constructed from fire resistant material and placed in the safest accessible position are sufficient given the scale of the risk.

*Incorrect use of procedure in relation to a ‘top-tee’ connection to a pipe:*

Following an incident in Clonsilla, where a contractor incorrectly attempted a ‘top-tee’ connection to a gas pipe, a communication in relation to the correct procedure for this type of connection was issued to all contractors.

The persons involved in the incident were also retrained and competence reassessed to ensure this does not reoccur.

*Recovery of costs:*

In relation to the two incidents that occurred due to interference with gas pipes during third party construction activities, the construction companies involved are being pursued in relation to recovering the full costs to BGN of these incidents.

*Carbon Monoxide Poisoning:*

The single carbon monoxide poisoning incident in 2006 arose from the operation of a flueless kitchen water heater. Such heaters have been the target of an on-going safety and public awareness campaign by BGN to identify and replace them. They present a hazard where there is insufficient natural ventilation in the room where they are installed and the unit has been left running for an extended period. In the case in question the affected individual recovered following the incident following medical attention from the family Doctor. The appliance was replaced by an electric water heater, provided and installed by BGN at no cost to the householder.

Overall the majority of recommendations arising from incidents in 2006 have now been completed. Any outstanding recommendations will be completed in 2007.

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**Outstanding Recommendations from Incidents prior to 2006**

The key issues progressed or reviewed in relation to or arising from incidents which occurred prior to 2006 were as follows:

*Oil to Gas conversion checks completed:*

Following the gas safety incident at Annville in 2003, where two persons lost their lives to carbon monoxide poisoning, BGN embarked on an inspection programme to ensure that any boilers using natural gas which may have been converted from originally using oil were inspected and their installation assured to be safe and appropriate for the use of natural gas. Part of this inspection included the provision and installation of a carbon monoxide alarm free of charge where a oil to gas converted boiler had been found.

During 2006 over 1,100 inspections were made and some 37% of boilers were found to have originally been oil burning. It is expected that all remaining inspections will be completed by March 2007.

The GSC has determined that all recommendations in relation to this incident have been completed and have officially closed this incident file.

*Retrofitting of pressure switches on specific cookers:*

Following an incident in Mount Merrion in 2005 it was found that a pressure switch on the cooker in the home in question had been faulty. Working with the manufacturer of the cooker approximately three hundred were identified as possibly having this switch installed. During 2006 a full inspection of all of these cookers took place and thirty-four were found to require a new switch, which was then installed free of charge. The GSC commends the manufacturer for their full co-operation in resolving this matter.

The GSC has officially closed this incident file as all recommendations have now been completed.

**International Incidents**

The GSC examined a number of international incidents throughout the year. The most relevant of these was the incident in Corfu where two children died of carbon monoxide poisoning. The Committee believes that this incident highlights the importance of the ongoing BGN carbon monoxide awareness campaign.

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## **Publicity Campaigns**

### *Carbon Monoxide Awareness:*

A comprehensive programme of television and newspaper advertising regarding the dangers of carbon monoxide exposure was continued in 2006. The Bord Gáis Safety Survey conducted in November 2006 showed that a high level of awareness on carbon monoxide poisoning continues among the general public.

During the year an information pack on carbon monoxide symptoms and a poster were developed as part of a campaign to target GPs. These packs are due for launch in early 2007. The GSC recognises the assistance given to this campaign by members of the HSE.

### *Third Party Damage:*

The campaign to reduce third party interference with gas pipes continued in 2006. While there was a small reduction in damage due to third parties in 2005, this reduction has been reversed with a 15% increase overall in incidents of mains damage by third parties in 2006. It is unclear why the increase in damage has occurred. The dedicated phone number provided by Bord Gáis to check location of pipes has seen an increase in the volume of calls received in 2006.

Going forward into 2007 the campaign will concentrate on directly accessing persons involved in construction who would have involvement in excavating near pipes.

## **Cast Iron Mains**

Cast iron has many advantages when used in pipelines. It is very strong and is largely impervious to corrosion in wet underground locations. However cast iron pipes have poor tensile strength and are therefore vulnerable to fracturing when subject to bending stresses as can arise from subsidence, ground movement, or heavy traffic. In 1988 it became BGN policy to replace all cast iron distribution mains and metal services with polyethylene piping and tubing.

There were a large number of cast iron mains in use in Ireland in 1987 - over 3000km in Dublin alone. The final lengths of cast iron in Cork were replaced in 2006. By the end of 2006 only about 700km remained to be replaced in Dublin. The current target is to finish the replacement of cast iron mains in Dublin by 2009. Then, cast iron pipes will no longer be employed to carry gas in Ireland and a major and costly programme to significantly improve gas distribution safety will be completed.

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**Transmission Pipelines**

In the light of continuing favourable reports on the condition of sub-sea gas transmission pipelines in the Irish Sea the GSC approved a proposal from BGN that the sub-sea surveys of transmission pipelines would, in future, be done every two years instead of annually.

**International Meetings**

The GSC was represented at the annual meeting of the European Pipeline Authorities in Aberdeen in June 2006 by Dr. McManus and Eamonn Murtagh.



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### **Section 3 – Plans for 2007**

Among other things, the GSC will continue to monitor:

- the replacement of cast iron mains pipes;
- safety statistics in relation to third party and accidental damage to pipes;
- the investigation and recommendations arising from all reportable gas safety incidents;
- public awareness campaigns in relation to CO poisoning, third party damage to pipelines and other campaigns as they arise.

Also during 2007 the role and activities of the GSC will be reviewed and amended as necessary in light of the recently passed Energy (Miscellaneous Provisions) Act 2006.

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## **Section 4 - 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.

Moving forward with new legislation to support industry safety initiatives, the GSC role will evolve to suit the new safety regime. This is a positive step for all customers and those involved in the natural gas industry towards a safer operational environment.

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

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## **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

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## **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;

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- 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,

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- 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.

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**Appendix 2 - Membership of the GSC 2006**

Chairperson	Dr. Tom McManus
CER	Eugene Coughlan, Director of Operations, Generation and Safety
CER	Eamonn Murtagh, Gas and Electricity Safety Manager
CER	Siobhan McHugh, Analyst
CER	Fiona Hannon, Analyst
CER	Sean Mac an Bhaird, Analyst
DCMNR	Bob Hanna, Chief Technical Advisor
BGÉ	Liam Nolan, Technical Safety Manager
BGÉ	Stuart Williams, Manager – Safety & Quality
BGÉ	Gerry Keane, Head of Network Operations
BGÉ	Liam Hearne, Manager – Safety & Quality (Trans)
BGÉ	Peter Clarke, Network Maintenance Manager (Trans)