



Gas safety review: options for change

This discussion document is issued by the Health and Safety Commission to encourage a debate about what changes should be made to the current health and safety regime for the installation and use of gas.

Responses would be welcome and should be sent to:

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to reach her no later than 4 February 2000

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Responses to this discussion document are invited on the basis that anyone submitting them agrees to their being dealt with in this way. Responses, or parts of them, will be withheld from the Information Centres only at the express request of the person making them. In such cases a note will be put in the index to the responses identifying those who have commented and have asked that their views, or part of them, be treated as confidential.

DISCUSSION
DOCUMENT

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GAS SAFETY - OPTIONS FOR CHANGE

Foreword

The safety of the installation and use of gas is an issue of interest to many consumers, particularly those who use gas for heating and cooking purposes in their homes. Currently there are upwards of 20 million households supplied with natural gas in this country. Others use liquefied petroleum gas as a fuel. Every year a number of gas incidents result in people being killed in their own homes from gas-related carbon monoxide (CO) poisoning or suffering ill health following exposure to CO. In addition, there are those who die or receive injuries from gas-related fires and explosions. These incidents focus attention on whether the health and safety regime for the installation and use of gas is robust enough, or could be improved in some way.

At the same time, many in the gas installation and maintenance industry have complained that existing regulatory controls are placing a burden on installation businesses - particularly small businesses and sole traders - that is out of proportion to the risks and disproportionate to the controls imposed on other activities which may affect the health, safety and welfare of the general public.

The Health and Safety Commission (HSC) has asked the Health and Safety Executive (HSE) to undertake a fundamental review of the current health and safety regime for the installation and use of gas to determine whether, or how far, changes are needed to the existing system of control. HSC's Strategic Plan for 1999-2002 includes, as one of five strategic themes, a commitment to improving health and safety performance in specified key risk areas, including gas safety. The commitment for gas is to achieve a 10% reduction in the number of fatal accidents due to carbon monoxide poisoning over a ten year average. Because of the extent of public concern, we would like to see an even bigger reduction. To make a real impact, we need an effective and publicly acceptable strategy, and appropriate underpinning arrangements, for the control of domestic gas safety. Such a strategy needs to maximise the contribution of everyone involved, who could contribute either to analysing the problems involved, or play a part in solutions we need to put into effect.

HSE have made a start by actively engaging representatives of all the main stakeholders in discussions on a number of key questions, and this discussion document shares views put forward so far by contributors to the review, and the results of relevant research, to prompt informed consideration of the viability of proposals for change. At this discussion stage HSC is not making any proposals for change.

The views and opinions expressed are those gathered from stakeholders. Neither HSE nor HSC has yet reached any conclusions as to their merits.

This review debate is not restricted to experts, though they have a valuable contribution to make: we also want to hear the views of the general public affected by the hazards presented by gas and the way we control them. We aim, with your help, to reach conclusions that will address the legitimate concerns of all stakeholders and result in a system that will command general confidence by delivering the highest safety standards in an equitable and cost-effective way.

To ensure that the issues are fully debated we have also published a short discussion document targeted at those issues of key interest to domestic consumers. Both documents are available on HSE's website www.open.gov.uk/hse/disdocs/

You are also welcome to make further proposals, beyond those included in the document, preferably accompanied by supporting evidence. We would welcome views specifically on:

- (i) the commitment to reducing carbon monoxide fatalities, including any ways in which you would like to become involved in work to fulfil it;
- (ii) how far the options considered in the discussion document could help to meet the target for reducing accidents;
- (iii) how far the options so far put forward meet the legitimate concerns of stakeholders, including small business;
- (iv) any other options you think should be considered;

We are also interested in your views on the way in which we have carried out this review, in particular:

- (v) how well we have conducted this review - specifically how you would rate this document (very well, well, not well, poorly) at explaining the issues it addresses.
- (vi) if you answered 'not well' or 'poorly' to (v) above, how things might be improved in the future.

Please send your comments to Debbie Biddle at the address on the front cover by 4 February 2000.

BILL CALLAGHAN
CHAIR
Health and Safety Commission

SUMMARY

What is this consultation about?

The Health and Safety Executive is undertaking a fundamental review of the health and safety regime in Great Britain (GB) for the installation and use of gas to determine whether, or how far, changes are necessary to the current system. This discussion document examines the various issues relating to gas safety and presents a range of views on changes that might be made to improve the existing regime. All of these views have been expressed to HSE's Gas Safety Review Team during consultation with key stakeholders, including those representing domestic consumers. Before reaching any final conclusions HSE wishes to stimulate a wide debate about both the issues and the possible options for dealing with them. We aim with your help to reach conclusions that will address the legitimate concerns of all stakeholders and result in a system that will command general confidence by delivering the highest safety standards in an equitable and cost-effective way.

The safety of the installation and use of gas in all premises is an issue that is of interest to many consumers, particularly those who live in domestic premises and use gas for heating and cooking. Each year there are a number of gas incidents that result in people being killed in their own homes from gas related CO poisoning (and more rarely, from fire or explosion) and there are also others who suffer ill health following exposure to CO. In addition, there are those who receive non-fatal injuries from gas related fires and explosions.

Analysis of available incident data suggests that the number of incidents has remained at a broadly similar level over the period since 1990. On average, 30 people have died each year from gas related CO poisoning with a further 7 dying from injuries received in a gas related fire and explosion. However, for 1998/99 the provisional data show that 37 people died from gas related CO poisoning. It is too early to say whether this signals the beginning of an upward trend.

At the same time many in the gas installation and maintenance industry have complained that existing regulatory controls are placing a burden on installation businesses - particularly small businesses and sole traders - that is out of proportion to the risks and disproportionate to the controls imposed on other activities which may affect the health, safety and welfare of the general public.

The risks

The document examines where gas safety stands in the hierarchy of risks compared to the use of other fuels, and other risks encountered in the home by the public. It also considers how the level of risk from gas in GB compares to levels in other European Union States, what and where are the greatest risks within domestic gas safety, which parts of the population may be exposed to a disproportionately greater risk and what is the public perception of the risk from gas. The detail of this work is in paragraphs 5 to 39.

Key issues for domestic consumers

Annual safety check of gas appliances and flues Under the current legislation, duties to safely maintain gas equipment are only placed on employers/self-employed persons and landlords; for landlords the maintenance duty is supplemented by the annual safety check requirements. There are no similar duties in respect of owner occupiers, although they are advised as a matter of good practice that

all gas appliances should be properly serviced/maintained and annually checked for safety. The issues around whether servicing of gas appliances should be required by law and how it may be funded and policed are at paragraphs 162 to 168.

Records of safe installation and servicing Although the current legislation requires very detailed and prescriptive recording for the landlords' annual gas safety check there is no requirement to record other test/examinations, eg when gas appliances are initially installed or when they are serviced. Several bodies have argued that the current position on records is anomalous and extra provisions are required to provide specific assurance to consumers that the necessary work has been done, and been done safely. Proposals for this type of approach are at paragraphs 169 to 173.

Gas safety checks in house transactions For rented accommodation, before the start of a new lease a gas safety check has to be carried out on any appliance/flue which has been installed for one year or more prior to the lease commencement date. A copy of the safety check record has to be issued to any new tenant before they occupy the premises. In contrast, there are no similar requirements for providing an assurance of the safety of gas equipment in owner occupied property, when such property changes hands. This issue is discussed at paragraphs 180 to 182.

The role and response of Emergency Service Providers (ESP) Under the conditions of the OFGEM¹ licence for Transco (the main ESP), service engineers attending an emergency call in a customer's home will work for up to 30 minutes and if they find a cause for concern, provide parts up to a value of £4 to repair equipment. If the fault cannot be remedied in this way, the gas supply to the appliance concerned will be disconnected or sealed off, and the customer advised to contact a registered installer for corrective action. Several bodies have expressed the view that ESPs should be required to take extra action, e.g. to investigate the cause of concern and repair defective equipment, where practicable. They argue that equipping ESP service engineers with flue gas analysers would partly address this problem (see below). The general issue of the role and response of ESPs is discussed in paragraphs 55-58.

The use of flue gas analysers Currently the law requires certain checks to be carried out immediately after installation or other work on a gas appliance; these include establishing the effectiveness of any flue, adequacy of combustion air and safe functioning of the appliance. However, no particular test methods are specified although HSE gives some guidance in its publications.

It has been proposed that gas installers and service engineers of Emergency Service Providers should legally be required to be equipped with flue gas analysers. It is argued that this proposal would make an important contribution towards improving gas safety, as in addition to analysing flue gases the same equipment may be used to detect and monitor CO levels in a room. The issues around this proposal are discussed at paragraphs 189 to 194.

Use of Carbon Monoxide alarms Some bodies have argued that increased recognition should be given to the positive role CO alarms can play in reducing CO incidents, and that they should be legally required in certain situations. Various suggestions have been made on how a requirement for alarms should be targeted, including all domestic premises, all rented accommodation, houses in multiple occupation, or the homes of vulnerable groups such as the elderly, disabled and chronically sick. Options put forward on how such a legal requirement might be applied range from placing a specific

¹ Office of Gas and Electricity Markets

duty on the gas consumer to fit the equipment through gas safety law, or for new buildings, on the builder by means of building regulations, to a duty on the gas supplier, applied by the OFGEM licence, to make supply conditional on the fitting of CO alarms.

It has also been suggested that (either in addition to or instead of legal control) further steps should be taken to encourage the fitting of alarms, eg by recommending their use in guidance produced by HSE and others and through further industry promotions, such as offers on alarms associated with the purchase of gas appliances or contracts. The discussion around the use of CO alarms can be found at paragraphs 183 to 188.

DIY gas installation and maintenance While the current regulations do not prohibit DIY gas work, this is strongly discouraged in HSE guidance, and the use of a CORGI² registered gas installer is advised for all gas work. People undertaking DIY gas work are still required by the law to have the necessary competence to do this safely, even though CORGI registration is not applicable.

Several specific initiatives have also been taken in this respect. For example, following approaches from HSC/E and Ministers, most DIY retailers now provide point of sale information and offer advice about competency and the use of registered installers; some have voluntarily restricted sale of gas appliance spare parts only to such installers; one retailer offers an installation service through approved, CORGI-registered contractors. The industry is also seeking to develop a voluntary scheme to restrict supply of gas fittings only to those people who are competent to undertake installation work safely. Some bodies have argued that such actions do not go far enough and further legal action is required. This matter is discussed in detail at paragraphs 148 to 154.

Key issues for landlords

The need to retain existing detailed and prescriptive duties on landlords for maintenance and annual safety checks on gas equipment was broadly supported, as rented accommodation is still seen to present a relatively high gas safety risk, compared to other sectors. In this regard, it was considered essential to maintain a high level of protection for vulnerable groups, such as students. However suggestions for change have been made in some areas, including:

Enforcement Currently enforcement of gas safety legislation covering the installation and use of gas appliances is split between HSE and Local Authorities (LAs). HSE enforces the law in the largest proportion of premises, including in all domestic premises. There is a view that LAs could play a greater role, particularly in houses in multiple occupation, on the grounds that this would provide a holistic and more proactive approach for gas inspection and enforcement and a range of options for achieving this are discussed in paragraphs 74 to 83 and 178a to 179.

Simplification of legal requirements and further guidance/publicity. Although no reduction in GS(IU)³ duties has been suggested, some have argued that the existing range of controls on landlords generally should be simplified, and that further guidance and publicity should be provided in this respect. It has been suggested that this would lead to an increased level of compliance, especially by the small landlord sector, including those entering the market for the first time through 'Buy to Let'

² The Council for Registered Gas Installers

³ Gas Safety (Installation and Use) Regulations

schemes, who may not be fully aware of their legal responsibilities. This issue is discussed in paragraphs 178(b)-(d) and 179.

Limiting liability of landlords. Concern has been expressed that the existing exceptions on liability in GS(IU)R do not protect landlords from legal action in respect of shoddy work carried out for them by gas installers. It has been argued that the landlord's duty should be limited simply to ensuring work is done by a registered installer with the required competence. This issue is discussed in paragraphs 178 (e) and 179.

Entry powers. Bodies representing landlords have suggested that provision should be made to require tenants to allow access to their accommodation for gas maintenance and safety checks to be carried out. It has been argued that this is important for ensuring safety of other occupants of property, eg blocks of flats and houses in multiple occupation. However, others have argued that such a power would constitute serious threat to civil liberties and could be readily abused by an unscrupulous landlord against vulnerable tenants. This issue is discussed in paragraphs 178 (f) and 179.

Key issues for installers, particularly small businesses

CORGI registration It is now nearly ten years since the introduction of mandatory business registration. A major question for the Review - in the light of experience during this period and major subsequent developments such as the introduction of certification for gas fitters - is whether the registration scheme remains necessary and appropriate. There are also other major issues - if a registration scheme is deemed necessary - such as, whether the registration scheme should be a statutory monopoly, the scope of the scheme, cost and the role that the CORGI Council should play in policy and strategic planning relating to the statutory functions of CORGI. These and other related matters are discussed in Part 5 at paragraphs 86 to 125.

Nationally accredited certification scheme for individual gas fitting operatives This is clearly a matter of major concern within the industry, and was highlighted in the report prepared for HSE by the consultants Vectra Technologies Ltd. The Vectra report says that almost all organisations consulted during the review of the statutory registration scheme for gas installation businesses expressed concerns about the new certification scheme for gas fitters, including the cost implications for employers and self-employed operatives, and that it probably generated more discussion than any other single topic. This concern was also reflected in HSE's meetings with stakeholders. The issues raised are discussed at paragraphs 126 to 141.

Work by non-registered installers The current regime requires any gas installation business, whether an employer or self-employed, to be a member of a 'class of persons' approved by HSE, that is CORGI registered. The issues around non-registered installers are discussed at paragraphs 155-161. Registered installers have also expressed concerns in relation to DIY work (see paragraphs 148-154 below).

Key issues for non-domestic installers

Scope of the Regulations Application of the Regulations to non-domestic installations has been questioned by several organisations which have pointed, especially, to practical difficulties in applying the new competency assessment regime to the working practice of the commercial sector and in respect of large or specialised equipment used in that sector. They argue that the ‘standardised’ prescription of the new regime, while suitable for ‘domestic’ gas fitting work is simply not geared to the special needs of the commercial sector, where contractual arrangements for particular tasks (eg initial installation of pipework/appliances in new buildings) are widespread, and ‘industrial type’ purpose designed plant is frequently encountered. For this reason, it has been argued that either commercial sector gas work should be excluded from the Regulations as a whole or from the specific requirements of the accredited certification scheme. However, others have argued that the same controls should apply in both the domestic and commercial sectors. This issue is discussed at paragraphs 198 to 201. Related issues concerning application of requirements to installation work not involving ‘live gas’ and large ‘industrial type’ gas plant are discussed in paragraphs 202-212.

Scope of the regulatory regime

Definition of scope by appliance type rather than premises. The scope of the existing Regulations is mainly defined by the type of premises (ie specified premises are excluded), rather than the type of gas equipment concerned. Some have argued that this is illogical from a safety standpoint, e.g. because a particular gas appliance will be covered by GS(IU)R when installed in (say) office premises, whereas the same equipment (i.e. presenting an identical risk) is excluded when located in an ‘industrial’ workplace. For this reason, it has been argued that application of requirements should be instead based on the type of appliance, e.g. by referring to a maximum heat input in the Regulations. This issue is addressed at paragraphs 228 to 231.

Prescriptive versus goal setting Regulations. The existing Regulations are very detailed and prescriptive; with many provisions dating back to the 1984 (and sometimes the 1972) Regulations. While many feel it essential for the existing approach to be retained to provide a ‘clear set of rules’, others have pointed to disadvantages with prescription (e.g. limited flexibility to accommodate changes in technology and working practice, leading to the need to regular amend the Regulations) and argued for a more goal-setting approach, especially in the non-domestic sector. This issue is discussed in paragraphs 232 to 237.

PART 1 - INTRODUCTION

1. The Health and Safety Commission (HSC) asked the Health and Safety Executive (HSE) to undertake a fundamental review of the current health and safety regime for the installation and use of gas to determine whether, and how far, changes are needed to the existing system of control.

2. This Discussion Document reports on the current health and safety regime that controls the installation and use of gas and outlines some possible options for change. The issues and options result from an initial consultation through bilateral meetings with key stakeholders, including consumers, gas installers, gas appliance manufacturers and organisations working within the relatively new liberalised gas supply market, supported by a survey of views of consumers, a review of the statutory registration scheme for gas installation businesses carried out for HSE by the consultants Vectra Technologies Ltd and an independent investigation of the available statistical data on gas incidents carried out by the consultants Business Strategy Group (BSG).

Background

3. Legislation controlling the installation and use of gas stems back to 1972 when the former Department of Energy introduced the Gas Safety Regulations 1972. These were updated in 1984 (Gas Safety (Installation and Use) Regulations 1984) and in 1986 policy and enforcement responsibilities for gas safety were transferred to the HSC and the HSE respectively. Over time the 1984 Regulations have been amended and consolidated resulting in the current regulatory regime which came into effect on 31 October 1998. The main changes have been the introduction of the statutory registration scheme for gas installation businesses in April 1991, duties on landlords of domestic premises with regard to gas appliances they provide for tenants' use in 1994, and further clarification of landlords duties in 1996. The 1998 Regulations consolidated the earlier Regulations.

Current Regime

4. The current health and safety regime for the installation and use of gas consists of two separate strands that work in parallel. First, legislation to control the installation and use of gas in domestic and most commercial premises; secondly, publicity campaigns designed to raise the awareness of the risks from gas targeted at those consumers who are either outside the scope of the legislation or are perceived to be at greater risk. The current legislation controlling the installation and use of gas is the Gas Safety (Installation and Use) Regulations 1998 which came into force on 31 October 1998 and place duties mainly on installers, landlords and some gas suppliers. These Regulations aim to prevent injury to consumers and the public from either carbon monoxide (CO) poisoning or fire and explosion arising from the use of gas systems and appliances. In particular the Regulations require gas installation businesses to be registered with CORGI, which is approved by HSE to maintain a register of gas installation businesses, monitor the competency of those businesses and their operatives to undertake gas work safely and to investigate complaints against registered installers. All gas fitting operatives are also required to be able to demonstrate they are competent to undertake gas work safely normally by being assessed against nationally accepted standards. Landlords have duties to ensure that the gas appliances and flues they provide for tenants' use are maintained and checked for safety each year by a CORGI registered installer, and a copy of the record of the check is provided to the tenants. Unlike landlords there is no duty **on owner/occupiers of private domestic property to have their gas appliances either maintained or regularly checked for safety.** For this reason HSE, other government departments and CORGI have, over the past few years, spent a considerable amount of

money on publicity campaigns aimed at: (a) owner/occupiers to raise their awareness of the risks from the use of gas and to advise them to get their gas appliances serviced and checked for safety each year, (b) tenants to advise them of the duties placed on their landlord and (c) landlords to advise them of what they need to do to comply with the Regulations. Details of the main requirements of the Regulations are given at Annex 1.

PART 2 - THE LEVEL OF RISK

Where does gas safety stand in the hierarchy of risks ? How does risk from gas compare to other fuels, and other risks encountered in the home by the public?

5 By risk, in this context, we mean the likelihood that hazards will cause death or serious injury, to people at home, based on an understanding of the nature of the hazard, and the types of harm it gives rise to, and an analysis of available information to show how prevalent these effects are amongst the population exposed to them. It is as true of the domestic environment as it is in industry that everything we do individually or collectively involves some degree of comparison of risks that we take for the benefits that we get from the activity – for example keeping warm and staying alive – and the price we are prepared to pay as a society – or have others pay - to minimise risk to an acceptable level. There are few, if any, genuinely risk-free activities; in many cases therefore the question arises whether an activity is safe enough, and whether the benefits of controls outweigh their disadvantages.

HSE's Approach

6. As a regulator, HSE employs a framework for its decision-making on risk issues which distinguishes between three zones into which risks may fall. Risks falling in the “unacceptable” zone cannot in general be justified, and thus allowed, whatever benefit might be derived from the activity. Risks falling in the “broadly acceptable” zone are regarded as insignificant and adequately controlled; further effort to reduce risk is likely to be disproportionate to any reduction in risk achieved. Risks falling in the “tolerable” zone can be accepted provided that control measures are introduced to drive residual risk towards the “broadly acceptable” zone and to a level which is as low as is reasonably practicable. When employing the framework to reach decisions on risk issues, HSE takes account both the level of individual risks and the societal concerns engendered by the activity concerned.

7. HSE believes that as a guideline – but not a rigid criterion – an individual risk of death of one in a million for both workers and the public corresponds to a very low level of risk, indicating the boundary between broadly acceptable and tolerable regions. This compares to an annual risk of death from cancer of 1 in 360 and a risk of death from being struck by lightning of 1 in 15,000,000.

8. It has been calculated that in 1995/96 the risk of death to the public from the use of gas (fire, explosion or carbon monoxide poisoning) was 1 in 1,350,000 averaged admittedly over the entire population rather than just those who use gas. The risk of death was below what is often regarded as broadly acceptable in relation to other risks, but there are reasons why gas incidents continue to give rise to societal concern: these include the behaviour of some landlords, who avoid their duty to have safety checks carried out, and put their tenants at greater risk, offending against notions of social equity; and the perception that gas is inherently dangerous, leading people to expect especially rigorous standards of control. Concern about CO poisoning is due in part to the fact that it is an insidious poison that cannot be detected by the senses and in part to the sad cases of multiple deaths that still occur in the UK; fear of an explosion caused by a leak and an ignition process is undoubtedly related to the severity of the consequences, coupled with the thought that these might arise from a simple error.

9. Most contributors who expressed views on the issue of domestic risk during the preliminary analysis phase of the Review contrasted the risk from gas with a perceived higher risk from electrical hazards in the home or from CO poisoning caused by solid fuels, and from other domestic hazards

unrelated to the use of fuel, such as slips, trips, and falls. To varying degrees they supported the intention to promote an informed discussion of risk in the home, based on sound data, though there was also an element of caution about the use and potential abuse of statistics and about the value of the available data (see paragraph 32 below for more on this). The point was made that a rational discussion of risk should inform rather than dictate the development of policy.

10. Having declined steadily since the privatisation of the British Gas Corporation in 1986, fatal domestic gas accident levels reached a plateau at an average of 37 during the years 1993 to 1997, before climbing in the year 1998/99 to the level last seen in 1990. These accident levels occurred against the background of a significant growth of 18% in gas usage over the decade 1990-1999, to an estimated 20 million households in Britain. Had accident rates stayed the same over the 1990-1999 period, accident numbers could have been expected to increase by the same rate to reflect increased usage and exposure to risk. The significant increase in the use of gas from 17m to 20m households could be viewed as reflecting some degree of confidence in gas safety, though clearly factors such as cost will have motivated people to switch to gas. Table 1 shows the total of fatal accidents reported to HSE for the years 1990-1999.

(Table 1)

Year	1990/1	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99
Explosion/fire	11	8	3	9	4	6	9	7	11
CO poisoning	30	33	41	29	30	29	31	28	37
Total	42(n)	41	44	38	34	36(n)	40	35	48

(n) Includes one fatality where the cause of incident is not known.

11. HSE commissioned Business Strategy Group (BSG) to review in detail the available statistical data for gas safety for 1996/97 and 1997/98, and to compare the data with that for accidents relating to other comparable fuels, and for accidents in the home generally, to enable a better understanding of comparative domestic risk. Subsequently the project was extended to include the 1998/99 gas accident statistics. Although it is not possible to say whether one year's figures represent the beginning of a trend or an isolated blip, we decided that the disappointing nature of the 1998/99 accident statistics justified additional scrutiny even though this extended the length of the Review. A summary of BSG's report to HSE is at Annex 2 and the (full report will be made available on HSE's web site) [www.open.gov.uk/hse/gas/index.htm]. The analysis draws on data collected by the Office for National Statistics and the Department of Trade and Industry's Home Accident Surveillance System, as well as by HSE.

12. There were an average of 3181 accidental deaths in the home during each of the two years 1996 and 1997. **Overall the risk attributable to gas in the home is very low, and is less than the risk from most common accidents.** Based on ONS data, the main causes of fatal accidents in the home are falls (42%), poisoning, excluding poisoning by gas/CO (24%), fires (14%), and suffocation/choking (7%). Gas is estimated to account for 0.75% of all domestic fatal accidents(24⁴), a slightly greater number than the 0.66% of fatalities caused by carbon monoxide poisoning from solid fuels, oil and paraffin(21). It has been estimated by the Solid Fuel Association that 1.4 million households use some form of solid fuel, compared to the 20 million where gas is used. Solid fuel-related carbon monoxide poisoning thus represents approximately twelve times the risks from gas. The difference in risk levels is significant, and is viewed by some of those who have expressed views so

⁴ HSE data show 29 deaths from gas-related CO poisoning per year

far as justifying the introduction of controls to protect the public in this area. Deaths from electric current account for 0.5% (17) of all domestic fatal accidents.

Question 1 - How should these relative risk levels affect our approach to protecting the public?

Question 2 - Should there be a risk reduction target for gas, as proposed by the Health and Safety Commission, of a 10% reduction in gas-related fatalities over a 10 year average?

How does the level of risk from gas in the UK compare to levels in other European Union states?

13. This question has been included within the Review on the basis that the public would expect that risk levels and safety standards should be as good as or better than those to be found elsewhere in Europe, where limited common standards⁵ apply to the certification of appliances, but not their installation or maintenance. Accident statistics are not, however, collected on a common basis throughout EU states, and there is no dependable basis for a quantitative comparison of risk between countries with different national control regimes.

14. In 1995, at the request of the European Commission the French Association Technique de Gaz (ATG) carried out a major qualitative study of national rules relating to the installation, control and maintenance of gas appliances, and of appliances using liquefied petroleum gas and oil: it is not possible to use this study to determine the risk of death from gas in one state as opposed to another. Whilst it is possible to say what differences there are between different control regimes, it is not possible to judge objectively which approaches are better, or whether – as some early contributors to the Review have suggested – levels of risk are broadly comparable across Europe, and possibly lower in the UK. The European Association of Consumer Representation in Standardisation (ANEC), in its summary of the ATG study, concluded that ‘a relatively similar level of safety is achieved’, in relation to technical standards, in the UK by means of ensuring the competence of installation mechanics, and in France, by requiring a certificate of conformity signed by the mechanic and third party control before an appliance is put into operation.

15. The full BSG report (on the HSE web site) compares UK home accident data with the Netherlands LIS Injury Surveillance System. It is interesting to note their conclusion that the figures suggest a very similar risk, although it is unclear whether both countries classify serious injury in the same way, and thus whether like is being compared with like, and whether the proportion of the population exposed to the risk is comparable. This illustrates the difficult nature of making European comparisons, despite the attractions in benchmarking the UK against our neighbours. The ATG/ANEC work indicates that the Netherlands has fewer controls than the UK – they require neither certificates of conformity as in France, nor qualified personnel, as in the UK – though it does have a requirement for mandatory maintenance of appliances, in common with the majority of EU states. The exceptions to this were Belgium, Ireland and Finland, which did not, and the UK, which appears to be the only state requiring annual safety checks limited to rented accommodation only. All others requiring checks to be undertaken include owner-occupiers.

⁵ Principally contained in the Gas Appliances Directive 90/3/96

16. Denmark has, in common with Austria and Spain, a highly regulated system, in which controls cover every aspect of domestic gas safety, including the legal requirement on a homeowner to have their appliances checked annually. This may reflect to some extent the tradition of relations between citizen and state in Denmark – as may be said of the UK – and also reflects what the Danish Governmental Gas Institute describes as zero tolerance of any gas accidents by society. Nevertheless, it is not apparent – and comparable statistics do not exist - that the Danes experience any lower level of risk or control it to any greater extent.

17. It would be complex and costly to replicate and update the European Commission-inspired work of ATG, and, as noted above, the absence of common systems for capturing and analysing data does not allow for reliable quantitative analysis of risk across Europe. There may, however, be merit in researching specific topics, for example the effectiveness of mandatory maintenance, where it applies to owner-occupiers in EU states, in considering the development of similar controls in the UK.

Question 3 - Should research be carried out on specific risk topics? If so, which?

(See also related discussion on research and publicity funding at paragraphs 43-45 below).

What and where are the greatest risks within domestic gas safety?

18. The work carried out by BSG on HSE gas accident data⁶, indicates that 73% of serious incidents and 75% of fatal incidents are caused by carbon monoxide poisoning, with 22% of incidents and 20% of fatal incidents caused by explosion, and 3% of incidents and 4% of fatal incidents caused by fire. In addition 2% of incidents are caused by gas leaks. (It should be noted that whilst BSG had access to work by British Gas Technology on a Downstream Incident Data Reports database, the DIDR database work is still in its development stage, and has not been used in the analysis which follows.)

19. The peak months for serious and fatal incidents are November, December and January, with higher than average figures for October and February. This coincides with high demand for heating, as opposed to use of hot water, where risk exposure would be broadly the same throughout the year.

20. Flats are the highest risk properties – 27% /19more of them are involved in incidents than their proportion of the national housing stock would suggest, and houses are relatively low risk, with an incidence 59/72% lower than might be expected. The reasons for this are unclear, though this may reflect to an extent the division between owner-occupiers and renters.

21. A higher proportion of incidents occur in privately rented property than the national split between rented and owner occupied property would suggest. Privately rented property is estimated to account for 10% of the national housing stock but 19% of all fatal and serious gas incidents. Though there are greater numbers of fatalities in owner-occupied housing, indicating a significant problem, a higher proportion of fatal incidents occur in privately rented property than the national split would suggest, and the proportion is correspondingly lower for owner-occupied housing where 66% of the

⁶ See Annex 2 and the HSE web site for details

national housing stock accounts for only 55% of all fatal and serious gas incidents. This clearly illustrates an enduring problem for the tenants of privately rented property, despite the introduction of controls to require landlords to have safe maintenance and annual checks carried out on gas appliances. Figures for Local Authorities and Housing Associations are generally on a par with their proportion of the housing stock, which may reflect their effectiveness as socially responsible landlords.

22. Distribution of incidents by region is broadly even, with the exception of the North West which has a significantly lower incidence, and London and the South East, which has 36% more incidents than the next highest regions of the country, the Midlands and Yorkshire, and accounts for the same proportion of incidents as Scotland and Wales combined. Population density may account for some of the difference, and a higher prevalence of privately rented accommodation, including flats, may also be making a contribution.

23. The conclusion of BSG, based on detailed analysis of inspectors' investigation reports is that behaviour is the most common (36%) contributory cause of gas safety incidents, and that there are often circumstances where there are typically two or more contributory factors. This includes failure to have appliances serviced (in both rented and owner-occupied property), which is recorded in 26% of cases, and leaving the gas tap on, without lighting the appliance in time, recorded in 11% of cases (see paragraph 32 below for more on behaviour and safety statistics). Inadequate or blocked flues (37%) or ventilation systems (13%) are also key contributors to fatal and serious accidents, and poor or incompetent servicing played a significant part in 11% of incidents.

24. Whereas gas boilers and cookers account for most serious incidents, gas fires account for more fatalities than cookers, and a higher proportion of fatal to serious injury than any other appliance: only in the case of gas fires are there more fatal incidents than other serious incidents.

Is any part of the population exposed to a disproportionately greater risk? Would they benefit from any targeted measures (regulatory or campaign-related)?

25. The Health and Safety Commission's Strategic Plan for 1999-2002 includes, as one of five strategic themes, action to contribute to delivering the Government's agendas for competitiveness and social equality. It was therefore decided that an important strand of the fundamental review of gas safety should be an evaluation of the impact of safety policy on different groups in society, as a basis for subsequent decisions on any action needed to prevent potential disadvantage. The analysis of HSE's accident data used to establish risk figures relating to the use of gas has been deepened where possible to look at the accident experience of different population groups, to help assess whether any are subject to a greater degree of risk than the general population. This, and research commissioned from MORI on related attitudes, behaviour and knowledge (see paragraphs 37-39 below for more on this), and preliminary discussions with interested bodies, give some indications of problem areas where special attention might be focused in the future. These are set out below as a basis for further discussion and analysis: more work is needed before proposals for change are finalised.

26. As indicated at paragraph 21 above, tenants in privately rented property are a vulnerable group, despite the introduction of controls to require that annual safety checks be carried out on appliances. There is some indication that further publicity and enforcement action may be needed in certain parts of the country to press home the gas safety message to landlords of privately rented property, particularly flats.

27. There are some unexpected differences in the accident experience of men and women, in that combined fatal and serious injury levels are broadly similar, but men are more likely to be fatal accident victims (72 men, 39 women) whereas most serious injuries occur to women (147 women, 117 men). One might have expected to see a higher risk level for women, based on the fact that more women care for children during the day, and would, in principle, be exposed to carbon monoxide emissions over a longer period of time. This contention is supported by limited study data (CO Support, October 1997) showing that of a group of 65 people suffering from chronic low level exposure to carbon monoxide in the home, 63% were women. It has been suggested that specific analysis of accident causation by gender may establish whether there are sufficient differences to justify targeting men and women in different ways through relevant publicity.

28. Statistics for fatal and serious incidents indicate that although gas accidents affect all age groups in society, the young, particularly aged 20-29, and the elderly are most vulnerable. Those in the 20-29 age group are more likely to be setting up home independently for the first time, as owner-occupiers, or, more often, as renters. This risk category would include students who are not only first-time renters, but are also more likely to face some specific problems related to short (9 month) tenure. Continued campaign activities focused on this group, including via student bodies and TECs, might have some effect (see paragraphs 63-66 for more on raising awareness of risk), and for older people, a focus on carers and other intermediaries would appear likely to be helpful. A key risk for the elderly is forgetting to light the gas tap, and lighting it some time later, with tragic consequences. One suggestion for dealing with this put forward so far is the fitting of flame failure devices to gas cookers (this is already required for certain large cookers under the Gas Appliances (Safety) Regulations. However, fitting such devices to all such appliances, and in particular retrospective application of such a requirement, would have important practical implications requiring careful consideration.

29. The statistics currently collected do not record either the possible disabled status of the accident victim, or whether or not they belong to a specific ethnic minority group, and so quantitative evidence does not exist on which to base a discussion of possible vulnerability in relation to these two groups. There are some reasons for considering them as such. For example, blind or partially sighted people, if they use gas, have specific problems that the fully sighted would not. Those for whom English is not their first language, and who may not speak it at all, may experience difficulties in understanding information made public about the nature of risks, or about rights and responsibilities under the law. Continuing disadvantage in the labour market – affecting the purchasing power of renters and forcing them to rent from the least conscientious landlords - could be expected to affect some members of these two groups disproportionately. A number of organisations contributing to the preliminary stage of the Review have expressed these concerns, raising the question whether special publicity and enforcement efforts should be targeted on the landlords of disadvantaged renters.

30. The elderly, disabled and chronically sick are able to take advantage of a scheme known as the Gas Care Register, under which gas suppliers would provide them, on request, with free annual safety checks (which would typically cost between £50 and £100), if they are eligible to register. It has been suggested that the scheme is poorly advertised and that take-up is consequently low; take-up may also be affected by possible concerns of low income elderly or disabled people that they would not be able to afford the repair or replacement costs which might be entailed if a free safety check reveals a fault with the system, and it is deemed unsafe for use. The Gas Consumers' Council have confirmed that there are no published figures to show how many disabled and elderly people make use of the scheme's free annual check, in relation to the numbers of gas users in these population groups. Representations so far have suggested that there is a need for better data on the help given to these groups, published nationally and regionally, for better advertising of the scheme, and for it to cover remedial work on a

system where there is a clear need, particularly for disadvantaged customers. It has been suggested that without such measures these vulnerable groups will not have their appliances serviced, which, as indicated at paragraph 23 above, is the main behaviour-related cause of fatal and serious gas incidents.

31. As noted at paragraph 21 above, fatal and serious accidents to owner occupiers form a lower proportion of the accident total than would be expected, though most accidents affect this group. The Gas Consumers' Council are examining the problems faced by the disadvantaged, and the availability of low-cost basic servicing packages, at the request of the Energy Minister. It has also been suggested that alongside awareness-raising measures, which have been pursued for some years, owner occupiers could benefit from regulatory measures of the kind that apply to landlords – which would be in line with a number of EU states – or alternatively, that duties are placed on gas suppliers to supply only on condition that a gas safety check has been carried out within the last year. **Section 7, concerning Controls, discusses this point in more detail.**

Question 4 - Does this analysis of potentially vulnerable population groups justify further regulatory action? If so, what measures are needed to protect them?

What more needs to be done to analyse and refine gas safety statistics?

32. Incidents related to the use of gas that cause death or major injury, other than those arising directly from work activities, are required to be separately reported to HSE under RIDDOR (the Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations) either by the emergency service provider (Transco) or the relevant gas supplier. The Health and Safety Commission publish gas accident data annually, showing a five years series of the numbers of fatal and serious reported incidents due to carbon monoxide poisoning or fire and explosion. Representations have been made during the initial stage of the Review asking for greater analysis of accident causation, and of data to enable better identification of groups most at risk. It has also been suggested that tighter definitions of what constitutes a serious incident are needed. This would have some resource implications for HSE and/or the gas industry.

33. A revised reporting form was issued in September 1999 (attached at Annex 4), incorporating minor changes designed to help inspectors decide whether reported incidents demand investigation and if so, how urgently. It is open for consideration whether, in light of the work of BSG, further changes should be introduced to place greater emphasis on accident causation, including the role of behavioural factors and multiple causation. It is also for consideration whether the revised form should include additional reporting categories to identify ethnic minority and disabled people, alongside existing data on age, gender and relationship to property. The key supporting argument is that this would provide a better basis for understanding the risks faced by all population groups, particularly groups which we believe, but cannot prove conclusively, may suffer disproportionate harm. One argument against the proposal is the sensitivity of recording and reporting this kind of data, and possible mistrust over motives for wanting to know more about accident victims. If such objections were not insurmountable, the industry might raise practical questions over how their staff would be expected to comply with any new requirements. The outcome of discussions over these key issues may - if a suitable way forward were found - be relevant to other areas of health and safety.

Question 5 - Would reporting changes be justified to cover causation, including behaviour, and the specific groups discussed? What other specific changes might be needed?

What account might be taken of fatalities or ill-health mistakenly attributed to non-gas causes in determining the level of risk?

34. Below lethal levels, carbon monoxide poisoning produces symptoms which can be, and indeed have been, confused with other illnesses – tragedies have occurred by people being sent home by doctors, being further exposed to CO, and then dying. In one recent case of the poisoning of an elderly woman, the cause of death was mistakenly attributed to hypothermia - action by the inspector investigating the case prompted re-diagnosis. Such cases have led some groups, particularly groups representing the victims of poisoning, to question the value of incident reporting arrangements and the ability of the medical profession to spot accurately a case of carbon monoxide poisoning when it presents itself. The extent of under-reporting due to a failure to notice the signs of poisoning is and seems likely to remain unclear, because of the inherent problems of medical diagnosis.

35. A number of organisations have suggested that further efforts to raise the awareness of the medical profession of the risks and symptoms of carbon monoxide poisoning are needed. Each year the Chief Medical Officer reminds GPs of the importance of this issue in a circular letter. It is suggested that this may not be sufficient, and that additional advice or information may be needed.

36. It has also been suggested that the general public should, in addition to current arrangements to publicise the symptoms of poisoning to them, be further encouraged to seek a carboxyhaemoglobin test within four hours of suspected exposure, after which time the poison is not detectable in the bloodstream. An appropriate sample needs to be taken as early as possible, and this may mean at certain times, eg at night, that a blood sample is taken for analysis the following day. The right of suspected poisoning victims to insist on a rapid blood test has been proposed; there may be difficulty in establishing such a right given that the need for laboratory studies is a decision for GPs and other doctors in A & E departments. Policy on this matter would be for the Department of Health, who are working closely with HSE on this Review. It has also been suggested that if a diagnosis of likely CO poisoning is made, the patient should not be allowed to return home until the house has been declared safe and other residents have been examined. Local collaborative arrangements for achieving this would appear necessary.

Question 6 - Do you have any views on possible misdiagnosis, and practicable suggestions for overcoming it?

What is the public perception of risk from gas?

37. In April 1999 HSE commissioned research on public attitudes and perceptions from MORI, carried out under the auspices of the People's Panel initiative, established by the Cabinet Office. Details of the results are at Annex 3 and are available via the Cabinet Office web site (www.cabinet-office.gov.uk). They show that of the available six options, gas, which accounts for in the region of 40 deaths each year, was considered the greatest risk in the home (58%), on a par with fires caused by smokers' materials, which account for some 180 fatal accidents annually; the risk

ranked next highest (54%) is DIY activities, which accounts for 6% of serious household accidents; rated slightly below this are risks from fires in general (52%) which account for around 400 fatal accidents every year, and from using electricity in the home (48%), which accounts for only 17 fatal accidents annually. The public perception of the greatest risks in the home differs significantly from analysis of where the major risks in fact are, as shown by fatal accident data. These perceptions are likely to contribute to general societal concern discussed above in relation to gas.

38. One of the strongest views expressed was that you should not be allowed to do your own DIY repairs on gas appliances in your home (91% felt this, 70% of them strongly). This reflects not only a high degree of concern about gas, but also about the dangers of DIY (which are not reflected in fatal accident figures). This finding is particularly striking given the opposition of the People's Panel sample group to the Government forcing people to take precautions for their own safety: it has been suggested the degree of opposition to gas DIY work is related to the fact that the DIY-ers do not carry their own risk, but affect potentially their family, their neighbours, and whoever buys or rents their property subsequently. **Section 7 below, on 'Controls' discusses the scope for further controls on DIY activity.**

39. A key element of the research, which bears directly on risk, was the degree to which regular servicing of appliances is carried out. The results indicate that 81% of people have their gas central heating boiler serviced once a year or more often (with lower figures of 74%, 64% and 29% respectively for the regular servicing of water heaters, gas fires and gas cookers respectively). When renters are examined as a separate group the figures are higher still - it needs to be borne in mind, however, that around 4% of the population, generally the poorest, do not have telephones and were excluded from MORI's research. We need to consider how far questions asked of 1000 representative people are likely to give a reliable picture of the extent of servicing actually taking place. Industry sources suggest that the study over-states the level, but there is no reliable central source for data on servicing. It has been suggested that the public might lump together any work done by a gas fitter (eg on repairs) with regular servicing. Since the absence of regular competent servicing is implicated in 39% of all fatal gas accidents, the degree of servicing taking place is a key issue.

40. DTI has also commissioned research into the extent of knowledge about the hazards of carbon monoxide from faulty domestic heating systems, and the precautions taken to reduce the risk of home accidents occurring. Overall, the findings suggest that general awareness of the hazard is high, but that practical and specific knowledge is low, ranging from patchy to non-existent. Gas fires (60%) and boilers (30%) were recognised as causes of carbon monoxide (CO) in the home, compared to only 3% who associated coal fires with CO. Those surveyed also identified poorly ventilated rooms (27%), blocked flues (19%) and faulty heating appliances (14%) as causes of a CO build-up. These data will make a useful contribution to future gas-related publicity strategy, linked to other data discussed above on vulnerable population groups.

41. Interestingly the DTI/MORI⁷ study found that seven in ten households with gas central heating or a gas boiler had had their system serviced within the last year, as recommended. As noted above, these data are not verifiable by reference to a central source for data on servicing: there seems to be no way of establishing which is the true level of servicing, but both studies indicate that somewhere in the range of 20-30% of relevant households do not have their equipment checked for safety on an annual basis.

⁷ Consumer knowledge of the hazards of carbon monoxide poisoning and faulty domestic heating systems, MORI, September 1999.

PART 3 - LEVEL OF RESPONSE

What level of resources are devoted to gas safety?

42. Analysis of available information suggests that accident levels are being broadly maintained at current levels after a downward trend, though figures for 1998/99 show a level seen in 1990/91. The Health and Safety Commission Strategic Plan for 1999-2002 includes gas safety as a key programme, based on aiming to achieve significant incremental reductions in the numbers of fatal accidents still occurring, and HSC have agreed this objective with the Secretary of State for Environment, Transport and the Regions. A question underlying this review is how this outcome should best be achieved, in ways that consumers and industry might support.

43. Since responsibility for the enforcement of gas safety legislation transferred to the Health and Safety Executive from the then Department of Energy in 1984, HSE's Field Operations Division (FOD) have devoted an average of 5% of its resources annually to gas safety enforcement, compared to 8/9 inspector years allotted to inspection by the Department of Energy in 1984. In 1998/9, 25 inspector years were allocated in FOD's Plan of Work; however 32 inspector years were actually expended on it. This increased level of inspection resources reflects both a general will to continue to bear down on accident numbers, and, related to this, a greater degree of regulation (including explicit duties on landlords in respect of the keeping of records and the provision of copies to tenants, safety checks, introduced in 1994 and extended in 1996), entailing additional enforcement effort to ensure that obligations are met. HSE in addition commits resources to domestic and international standards development via its Technology Division and advises on regulatory control through its Safety Policy Directorate.

44. In addition CORGI deploys around 140 inspectors and additional senior inspectors to investigate complaints, monitor the competence of installers, and notify HSE of non-registered gas installers, in accordance with criteria agreed by HSE. Though HSE is not responsible for CORGI's inspectors, who have no formal enforcement function in Great Britain, their contribution remains a factor in assessing resources devoted to the issue.

45. HSE, and the Departments of Health, Trade and Industry, and Environment, Transport and the Regions, contribute approximately £2 to £3 million each year to gas safety-related research, partly through the Joint Industry Programme co-ordinated by British Gas Technology. In 1994/5 HSC reported to the then Energy Minister that after liberalisation of the gas supply market it would be important that the work of the British Gas Corporation on standards and research should be continued: "If satisfactory voluntary arrangements are not agreed, consideration should be given to the Director General of Gas Supply imposing licence conditions which would ensure that the industry continues to undertake the appropriate level of research for safety purposes." The JIP is a fixed-life programme to which the major contributors are HSE and BGT. The future of an industry sponsored group – VIGIL - which might have co-ordinated permanent arrangements, is itself under review and may or may not continue, in the same or in a different form. Arguably without firmer long term arrangements, future cases for gas safety-related research may be decided on an ad hoc basis. This is currently the situation for projects not already part of the JIP.

46. Since 1993 HSE has spent around £3.7m on gas related CO publicity. In 1995/96 BG Transco, CORGI and the Gas Consumers Council contributed to a major HSE publicity campaign which involved national TV and cinema advertising backed up by advertising in national and regional

press. An independent analysis after this campaign revealed that 60% of those surveyed were more aware of the dangers of CO poisoning as a result of the campaign. Since then HSE advertising campaigns have been more modest, with an annual budget of around £100K. In addition, DTI has spent £125K each year for the past three years, and proposes to spend the same over the Winter of 1999/2000, advertising the risks from all forms of CO poisoning. CORGI on average spends £150K each year on its gas safety publicity campaigns.

47. Publicity has been focused mainly on those in rented accommodation and in particular the duties of landlords under GS(I&U)R 1996. A portion of the annual budget is spent running HSE's freephone Gas Safety Advice Line. A measure of HSE's success in raising awareness is the number of calls to the Advice Line. These have risen from 7,500 in 1995 to over 20,000 in 1998. Much of this increase can be directly attributed to the promotion of the freephone number on all winter gas bills.

Question 7 - Is the level of resource expended by HSE on enforcing the Regulations appropriate or is some other level more appropriate? Is spending on current publicity adequate? If not, how much more should be spent?

How does this compare to any comparable sectors?

48. There seems to be no directly comparable sector, because of the specific hazards posed by gas and the degree of public reassurance required, but the risk comparison for coal has prompted some further comparisons with the control regime for that sector. For coal heating engineers, a voluntary registration scheme is operated by HETAS⁸.

The voluntary nature of the scheme means that there are likely to be many non-registered coal heating engineers who may not have the competence to work on coal heating systems. The view of the Solid Fuel Association is that the absence of a control regime similar to that for gas goes some way to explaining the higher risk that coal represents to the consumer. It is nevertheless a comparatively small industry, and some have doubted that it could realistically support registration and competence certification arrangements of the kind that exist for gas, funded by installers. As has been noted, DTI devote some resources to publicising the general dangers of carbon monoxide, which contributes to raising the awareness of gas and coal consumers.

49. Work carried out by electricians in the home is also subject to a voluntary registration scheme, operated by (NICEIC⁹ and ECA¹⁰) (SELECT in Scotland). As noted in section 2 above, electricity accounts for relatively few accidental deaths in the home, and it is likely – though few data are available – that these are due more to misuse of electricity by consumers than to incompetent work by electricians.

⁸ Heating Equipment Testing and Approval Scheme

⁹ National Inspection Council for Electrical Installation Contracting

¹⁰ Electrical Contractors Association

Does the level of response match the risk?

50. As discussed above, the risk from gas is relatively low but the current judgment of HSC and Ministers is that more should be done to make significant and lasting inroads into fatal gas accident numbers: a target of achieving a 10% reduction in carbon monoxide-related fatalities over a 10 year average is what is proposed. For some, this aim is too ambitious, and might lead to additional costs on industry or consumers out of proportion to the benefits to be achieved; others would argue that the aim is not ambitious enough, as it is not based on 'zero tolerance' of accidents. Deciding the balance between costs and benefits is a difficult matter: the assumed benefits of particular measures can be speculative, and the costs for some measures may appear prohibitively high. Discussions on improvements in other sectors of public policy generally use as a starting point a notional value in the region of £1 million per statistical life saved; this should not be interpreted as a limit for public or private expenditure, but as indicating a level which, if exceeded significantly, would need to be justified, for example in relation to public concern and a corresponding desire to bear down on accident levels. The main options put forward so far as part of the Review, and which are discussed in the main body of this document, have been assessed in broad terms to enable some cost comparisons to be made and to inform debate on them (Annex 9 refers).

51. The discussion of population groups most at risk suggests that publicity and enforcement efforts could be targeted on these groups. There is limited scope, however, for either HSE or CORGI to expand the total resources that each devote to enforcement and inspection respectively. HSE's total inspection effort also embraces high risk industrial sectors, such as nuclear installations, other major hazard installations (onshore and offshore) construction, agriculture and others to which the general public has a high degree of exposure such as railways, and there seems no case for taking resources from those sectors, in which HSC and Ministers are also committed to improving safety. CORGI could only expand its inspection force by increasing its registration fee, which installers adapting to the new demands of competence certification would find difficult to bear (see more on enforcement arrangements at Part 4 below), or by using additional revenue generated through a system of charging for completion certificates for work carried out by registered gas installers, which would have cost implications for the installer or, ultimately, the consumer (for more on this proposal see paragraphs 171(a), 172 and 173).

Should others contribute resources to publicity campaigns raising awareness of risk, or funding safety-related research?

52. One option strongly advocated by a significant number of contributors to the review is that research and publicity should be funded by a licence condition imposed on gas suppliers, as HSC had indicated might be justified in 1994/5, to raise an annual levy of £1 on suppliers for each household that they supply. This would raise around £20 million each year, which would be a significant increase on the present position, and might, beyond research and publicity, provide resources for other safety-related initiatives, particularly related to identified risk-groups.

53. Against this proposal it has been suggested that a levy would amount to a form of taxation, which if needed could be funded by the Government out of general taxation; that it could be seen as an additional burden not put on others contributing to risks in the home (eg coal suppliers); and that it would fall unevenly on the gas suppliers and not the gas installers. On this latter point it should be noted that gas installers are mainly small firms or self-employed, already required to demonstrate competence under new certification arrangements, requiring an increased investment in safety. Installers

also already contribute to the regulatory arrangements for safety in the industry through the registration fees that are the primary source of the funding of the Council for Registered Gas Installers (CORGI).

54. Whilst this is not an issue for HSC to decide, it may nevertheless be appropriate for it to make recommendations to the Secretary of State for Trade and Industry and the Director General of OFGEM (Office of Gas and Electricity Markets), based on further views put forward in response to this discussion document. **Views are invited on the future funding of research, publicity and special initiatives, including the merits of a levy on suppliers.**

Role and response of emergency service providers (ESPs)

55. Legal requirements to respond in case of a gas escape or carbon monoxide emission are applied by the Gas Safety (Management) Regulations (for mains, i.e. natural gas-related incidents) and the Gas Safety (Installation and Use) Regulations (for other gases, e.g. LPG). The duty to take action rests with the relevant gas conveyor/transporter (for natural gas) and the gas supplier (for LPG), however, in both cases, an emergency service provider (ESP) may be appointed to put this duty into effect.

56. Under the conditions of the OFGEM licence for Transco (the main ESP), which applies in respect of mains (i.e. natural) gas, service engineers attending an emergency call in a customer's home will work for up to 30 minutes and if they find a cause for concern, provide parts up to a value of £4 to repair equipment. If the fault cannot be remedied in this way (i.e. the system remains unsafe), the gas supply will be disconnected/sealed off at the appliance or meter, and the customer advised to contact a registered installer for corrective action. If gas equipment is disconnected, arrangements also exist for ESPs to provide temporary heating and cooking facilities for customers with special needs, such as the elderly, disabled and chronically sick, under 'gascare' registration schemes (although some have argued that these arrangements are not always effective in practice - see paragraphs 30 and 167).

57. The former OFGAS (now OFGEM), have reported that they received very few complaints from customers about Transco's emergency service. However, several key stakeholders consulted in this Review expressed concerns about the present arrangements, and in particular, what they see as a marked reduction in the quality of service compared to that offered under the integrated British Gas regime, where repairs were normally carried out, at no cost to the consumer. It has also been argued that service engineers often take the easy course, under current arrangements, of simply disconnecting equipment rather than investigating the cause of concern or attempting remedial action; and there is some evidence for this in the statistics of reported incidents (see paragraphs 32-33). It has also been suggested that the fact that ESPs are not currently equipped with flue gas analysers to identify faulty gas equipment is a key contributory factor in this regard (this specific issue is discussed in paragraphs 190-194).

58. Certain questions on the role of emergency service providers, e.g. concerning remedial action after a gas supply emergency, are being addressed in the current review of the Gas Safety (Management) Regulations. It has been argued that those Regulations might partly address concerns expressed above, by imposing a new duty on an ESP to take reasonable steps to verify that there is a genuine incident before reporting under RIDDOR, or (in the case of CO emission) to the gas supplier under GSMR regulation 7(15). However, wider and related questions over the extent of action required by ESPs (including time, equipment and associated cost implications) are largely for DTI/OFGEM to decide, in view of the implications for licence conditions and gas pricing policy.

Further consultation would therefore be required, if it was finally decided to pursue any proposal in this respect. In the meantime, views are requested on the following issues of principle:

Question 8 - What are your views on the current role and level of response provided by Emergency Service Providers (if you believe that changes should be made, please give details)?

Question 9 - What are your views on whether ESPs should legally be required to take reasonable steps to verify that there is a genuine incident (i.e. by carrying out the necessary examinations/tests), before a report is made under RIDDOR/GSMR?

PART 4 - ROLE OF HSE AND INTERMEDIARY BODIES

59. Many felt that HSE was doing a good job within the limit of the resources available to them although many commented on the need for a more proactive approach to inspection, particularly in the pursuit of non-registered installers. Most seemed content for HSE to retain overall responsibility for the legislation, even where it was felt some enforcement powers could be transferred to other bodies. The remainder expressed no views on this subject.

60. One respondent indicated support for the setting up of an independent and dedicated Gas Safety Inspectorate into which CORGI inspectors could be transferred. However no details were given of how this might work in practice. Also, some respondents considered that there may be a case for giving CORGI a limited enforcement role.

61. Several of those consulted mentioned that the issue was perhaps wider than just gas safety and that risks from other fuels should also be taken into account. One suggestion was for the setting up of an independent Executive to regulate the use of all combustion fuels. Whilst this does not affect the validity of the suggestion, there was no indication of how this Executive might be funded or who it would ultimately be responsible to. Views were noted and have been included in this discussion document but, as the remit for safety of fuels other than gas does not rest with HSE, this is outwith the agreed scope of the current Gas Safety Review.

Is there a satisfactory balance between inspection and publicity/awareness campaigns?

62. Almost all of those who expressed views on this topic were keen that there should be no reduction in enforcement activities. Many were of the view that more enforcement activity should be undertaken with inspections being of a more proactive nature. It was suggested by some that more resources needed to be made available by HSE for inspection and enforcement. It was accepted, however, that there were practical difficulties with this because HSE had many competing priorities and, in the absence of an overall increase in resources, an increase in resources expended on gas safety inspections would mean a reduction in resources in some other equally important area.

63. There was also a feeling that gas safety publicity and awareness campaigns were important and should be allowed to continue without any reduction in current resources. In most cases consultees who wished increased focus on inspection while still maintaining an active publicity campaign were also supportive of the idea of some sort of levy being imposed on gas suppliers. This had the potential to raise a considerable sum of money each year and it was suggested this could be used to fund publicity and research. The costs in relation to this levy are outlined in more detail in Annex 8 of this discussion document.

64. There was a small number of those consulted who wished to increase the focus on inspection but did not support the proposal to introduce a levy. These organisations gave no specific suggestions about where the additional funding required might come from, other than the general comment that HSE should provide additional resources.

65. Some useful suggestions were made about the type of publicity and awareness raising needed. It was felt that HSE should be more robust in publicising the enforcement action it undertook and the penalties which resulted despite the fact that currently publicity for prosecutions does take place through Regional COI¹¹ and HSE's Press Office where significant enforcement with the potential for local or national impact takes place. This type of publicity would serve two purposes. Firstly, it would reassure registered installers that enforcement action was taking place. Secondly, it would serve as a deterrent to non-registered (and/or incompetent) installers by warning them of the penalties they might face if prosecuted as a result of their activities.

66. A longer term suggestion was the raising of awareness amongst schoolchildren. Again this was perceived to have two benefits. Firstly, being reminded by children of the need to have appliances regularly serviced and maintained would influence the attitude of parents. Secondly, in time these children would grow up with a greater awareness of gas safety issues than previous generations. They would then be more likely to follow recommended health and safety guidelines in relation to the use of gas appliances and the need for regular servicing.

67. A further suggestion was that by gathering greater intelligence into the precise causes of incidents, publicity could be targeted more effectively towards problem areas.

68. There was a general feeling that the success of future publicity campaigns would be judged mainly by their effect on accident statistics but it was recognised as important that safety statistics for gas are compared with similar statistics for other fuels to gain a better overall picture of comparative risks. This is discussed in more detail in paragraphs 5-12.

Proactive inspection and stronger enforcement, particularly against non-registered and incompetent installers - strategy for identifying non-registered installers

69. As indicated in paragraph 62, many thought HSE should be more proactive in their approach to enforcement and could do more to publicise their enforcement activities. Again this would require increased funding and no specific ideas were expressed for exactly how this might be done.

70. There was strong feeling that more needed to be done to tackle the problem of non-registered installers. In particular, it was suggested that CORGI should concentrate more of its resources to identifying non-registered installers rather than frequent inspections of the work of those who were registered (see paragraphs 153-159). This also raises the question as to whether CORGI should be given enforcement powers in Great Britain, to supplement the enforcement effort of HSE (for more on this issue see paragraphs 84-85).

71. The CORGI Identity Card scheme was generally supported and there was also support for more publicity to encourage the use of registered installers on the part of the general public and discourage DIY gas work.

72. Stronger penalties were suggested for non-registered installers who endangered the lives of others and the need to publicise those penalties more actively also received strong support. Concern over

¹¹Central Office of Information

penalties imposed by the courts is expressed frequently in relation to all health and safety offences, and is being actively pursued by HSC/E as a priority.

HSE relationship with CORGI

73. Very few respondents commented on the relationship between HSE and CORGI but some of those who did felt installers might have difficulty in differentiating between their respective roles. It was felt that there should be a greater distance between the two organisations and that the relationship needed to be more transparent. It was recognised, however, that there did need to be some regular contact between the two organisations on both policy and operational issues. The roles of each organisation need to be more clearly defined than at present and most who expressed a view thought it should be HSE's job to ensure this was properly done. It has been suggested that it is HSE's responsibility to provide a clear steer to CORGI on the acceptability or otherwise of undertaking commercial activities (through a subsidiary private company) in addition to their role as a statutory body. This is a sensitive issue which is considered more fully in the section on "The non-statutory business activities of CORGI" at paragraphs 113 - 117.

Other enforcement bodies - increased role for LAs and CORGI

74. Currently enforcement is divided between HSE and local authorities (LAs) in accordance with the Health and Safety (Enforcing Authority) Regulations 1998 (HSEAR). This means that the largest proportion of premises where gas is used, including around 20 million households, fall to HSE for inspection and enforcement purposes. The role of LAs in enforcing HSWA legislation and Gas Safety (Installation and Use) Regulations is restricted to those non-domestic premises allocated to them by Regulation 3 and Schedule 1 of HSEAR, for example offices, hotels, restaurants and mobile catering services caravan and holiday home sites providing permanent or temporary residential accommodation for caravanners or campers.

75. However, at any such premises allocated to LAs for general HSWA enforcement purposes, HSE retains enforcement responsibility for the installation, maintenance or repair of a gas system, or any work in relation to a gas fitting, if the work is carried out by persons who do not normally work in the premises, such as CORGI registered installers brought in to carry out gas installation or servicing work. This split of responsibilities often leads to confusion, both by LAs and employers occupying commercial workplaces.

76. In recent years, HSE's Field Operations Directorate (FOD) has devoted between four and five percent of its total resources to gas safety matters. This resource has largely been taken up by reactive work to deal with reports of gas incidents and complaints related to the many millions of gas consuming premises not allocated to LAs by HSEAR. This reactive response to gas safety work dates back to 1984, and the terms under which HSC/E first took over gas safety policy and enforcement responsibilities from what was then the Department of Energy.

77. However LAs have other enforcement roles to play in respect of housing and building legislation that impinge on gas safety, including very specific gas safety provisions applying to houses in multiple occupation (HMOs). This legislation overlaps HSWA legislation to some extent, but does not exactly match it; importantly it does not call for annual gas safety checks by landlords nor the

provision of records of these checks to tenants, as regulation 36 of GS(IU)R does. Currently the amount of resource that LAs invest in gas safety enforcement under either HSWA or separate building and housing legislation is unknown.

78. During the past three years some local authorities, consumer groups and the Chartered Institute of Environmental Health have approached HSE seeking a greater role for LAs in enforcing gas safety law in the round, in particular the duties placed on private landlords. They have pointed out that they already proactively, rather than reactively, visit privately rented property, particularly those in multiple occupation, and look at gas safety issues when they are there. They expressed a wish to enforce the requirement about ensuring that an annual safety check of gas appliances and flues is undertaken, and the results of any such checks are recorded, and are passed on to tenants (regulation 36 (3), (5) (6) and (7)). They did not wish to enforce regulation 36 (2) which requires landlords to ensure that gas appliances and flues they provide for tenants' use are maintained in a safe condition so as to prevent the risk of injury to any person lawfully occupying the premises. These approaches were confined to gas safety matters at HMOs where landlords were already required to maintain gas appliances in a safe condition. LAs visit these on a regular basis and often take a satisfactory record of a safety check under GS(IU)R as proof that a landlord is meeting the requirement in HMO legislation.

79. During April 1999 the Department of the Environment, Transport and the Regions consulted on proposals for the licensing of houses in multiple occupation in England¹² (Welsh Office have published similar proposals for Wales). The consultation document recognised the overlap between parts of HMO legislation and GS(IU)R and acknowledges that HSE's review will consider the issue of enforcement strategies with a view to trying to eliminate dual enforcement, but at the same time satisfying the overall safety interests of gas consumers. The Scottish Executive plans to introduce mandatory licensing of HMOs in year 2000. The associated guidance for local authorities will include gas safety.

80. During the course of seeking views from key stakeholders and others about possible changes to the health and safety regime for the installation and use of gas several options have been suggested related to the enforcement role of LAs. These are to:

- (i) remove gas safety in HMOs from the requirements of HSWA gas safety legislation and place it in the proposed licensing conditions. This could be part of a process to give LAs sole responsibility for enforcing health and safety standards in HMOs;
- (ii) leave gas safety in HMOs subject to HSWA gas safety legislation and transfer responsibility for enforcing all of the duties placed on landlords under it to LAs. The remaining duties, for example those related to the activities of gas installers who do not normally work in those premises, would fall to HSE for enforcement;
- (iii) leave gas safety in HMOs subject to HSWA gas safety legislation and transfer responsibility for enforcement to LAs;
- (iv) transfer to LAs responsibility for enforcing all HSWA gas safety legislation in the private rented sector;
- (v) transfer to LAs responsibility for enforcing all HSWA gas safety legislation in the private rented domestic sector and those premises allocated to them by HSEAR; and

¹²'Licensing of Houses in Multiple Occupation - England. Consultation Paper', DETR April 1999 (and parallel proposals for Wales, published by the Welsh Office).

- (vi) transfer to LAs responsibility for enforcing all HSWA gas safety legislation in the domestic sector and those premises allocated to them by HSEAR.

Options iii), iv), v) and vi) would give LAs enforcement responsibility for gas safety issues related to the work of CORGI registered installers, non-registered installers and people doing DIY work in the premises described in each option.

81. All of the options have some attractions for those who either enforce gas safety law or have to comply with it. They may also lead to a more proactive approach to enforcement in either HMOs or the whole of the private rented domestic sector. LAs visit these types of premises to enforce housing and building legislation, and gas safety issues could also be addressed as part of these inspections (even now they sometimes are) with a minimum increase in the resource necessary. In most cases they also would prevent dual enforcement.

82. This said, LAs would need to expend resources to deal with investigation of reported incidents and complaints, and the necessary changes to reporting procedures for gas incidents may cause confusion among consumers and adversely affect the accuracy of gas safety data. Most of the options would entail revision of the agreed procedures for liaison with CORGI, British Gas Services and Transco and other bodies representing consumer interests at both national and local levels; and new liaison arrangements between HSE and LAs would be needed to ensure good cooperative arrangements to secure exchanges of information and consistency of enforcement standards. Also, any changes would entail additional training costs for LAs, and possibly HSE in transferring expertise to the LA sector.

83. However, some people have expressed the wish that with regard to enforcement of gas safety there should be no change to the current allocation of responsibility. This would leave HSE as the enforcing authority for all domestic premises; a considerable task given that natural gas is piped into some 20 million households. Supporters of this approach also suggested that HSE should receive additional resources to ensure that inspection would be undertaken on a prioritized proactive basis rather than the current reactive basis.

Question 10 - What are your views on these options for extending the enforcement role of LAs with regard to gas safety? Which would be your preference or would you wish to see no changes?

84. Some people have also suggested that CORGI could have a limited enforcement role, particularly with regard to non-registered installers, similar to but not as wide as that which it has on the Isle of Man. It is important to understand that the Isle of Man is independent and has its own government which deals with everything from taxation through to health and safety. Regulations similar to the Great Britain Gas Safety (Installation and Use) Regulations were introduced on the island in October 1996. These made it mandatory, from 1 April 1997, for all businesses, self employed and those employing people who work on gas fittings to be registered with CORGI.

85. The Isle of Man is unique in many ways so it is not surprising that the final agreement reached between the Government and CORGI differs slightly from that in GB. The biggest difference is that CORGI inspectors have enforcement powers. When investigating gas related incidents they have the

power to issue Improvement and Prohibition Notices against installers whether they are registered or non-registered. Those found to be non-registered can be required to seek CORGI registration or cease undertaking gas work until they have achieved such registration. Prosecutions for failure to comply with the requirement of a Notice, and any other alleged breach of gas safety legislation, are instituted by the Government's health and safety inspectors.

Question 11 - What are your views on CORGI being given similar limited enforcement powers in Great Britain?

PART 5 - STATUTORY REGISTRATION OF GAS INSTALLATION BUSINESSES

Introduction

86. One of the principal changes to be made to the gas safety regulatory regime since 1972 has been the introduction, with effect from April 1991, of a statutory registration scheme for gas installation businesses. The new scheme replaced the voluntary arrangements that had been operated by the then Confederation for the Registration of Gas Installers (CORGI) since 1971.

87. The creation of CORGI was prompted by the report of the public inquiry into the gas explosion at Ronan Point, East London, in 1968, when a block of flats partially collapsed, killing four people and leaving 100 families homeless. A poorly installed gas appliance was found to have caused the blast, and the inquiry concluded, inter alia, that high standards of safety would be achieved if “the fitting of gas appliances by all save Area Gas Boards or approved sub-contractors were prohibited”. CORGI emerged as a voluntary, self-governing association for all gas installers, contractors and gas boards engaged in installation for the purpose of recognising and implementing acceptable standards of work. The organization was funded entirely by the British Gas Corporation and subsequently British Gas.

88. Following privatisation of British Gas in 1986, the Government asked the Health and Safety Commission (HSC) to propose a fresh approach. This resulted in wide consultation on proposals set out in the HSC's Consultative Document (CD) “Registration of Gas Installation Businesses” in 1989. The CD sought views among other matters on whether there should be a voluntary or mandatory scheme of business registration to succeed the current arrangements. It also invited comments on proposals for a new registration body put forward by a Steering Group under the aegis of CORGI.

89. Of the 176 replies made in response to this consultation, the great majority were in favour of a mandatory scheme for the registration of businesses, which would be independent and self-financing through registration fees. A majority also favoured a parallel scheme requiring individual operatives to hold a certificate of training and/or competence. HSC's Advisory Committee on Dangerous Substances also favored the operation of individual certification as well as business regulation. In the event, the HSC decided that the first priority should be to focus on the establishment of the statutory business registration scheme, with further consideration being given to individual certification as a second stage.

90. On funding, there was wide support for the principle that businesses should pay registration fees, on the understanding that British Gas's offer to contribute 50 per cent of annual running costs was taken up. This was seen as fair, in that half of all gas installation work was undertaken by British Gas at that time. The basic registration fee proposed at that time was £45, with an additional £8 payable for each additional operative. At that level, the fee was not seen as an undue burden on the small firms sector, which was generally supportive of the proposal. (The British Gas contribution together with the installer registration fee of £45 would have equated to a total basic registration fee of £90 in 1991. Taking account of subsequent inflation, this is very broadly in line with the current level of fee in real terms).

91. The 1990 legislation, incorporated in the 1994 and 1998 successor Regulations, requires that gas installation work in domestic and a wide range of commercial premises must be carried out only by businesses belonging to a body approved by HSE. CORGI, now the Council for Registered Gas

Installers, was the sole applicant for this status in 1991, was duly approved and has operated the statutory register since that time.

92. CORGI operates in accordance with criteria which are set from time to time by HSE and which, along with CORGI's performance as the statutory registration body, are subject to periodic review. A review in 1995, taking account of recommendations made by the consultants Touche Ross, resulted in revised criteria being set. In particular, CORGI was charged with the development of a nationally accredited certification scheme for individual gas fitting operatives (ACS), in addition to maintaining the register of gas installation businesses. This was undertaken in consultation with the industry, training and assessment providers and other interested parties, including the United Kingdom Accreditation Service. A Joint Standards Body was set up for the purpose of developing assessment standards. This certification scheme has been phased in with effect from 1 January 1998 and when fully in place will have superseded previous arrangements for training and individual competency assessments based on HSC's Approved Code of Practice (ACoP) on "Standards of training in safe gas installation", first published in 1988. (For work with natural gas appliances in domestic premises, the new arrangements are already in force).

93. At the same time, CORGI has tightened the registration criteria for businesses, to the effect that from 1 August 1998 businesses have had to demonstrate that all their operatives are fully competent and certificated, under either the ACoP or the new nationally accredited scheme (ACS), as a condition of registration.

Is the statutory registration scheme for gas installation businesses still appropriate?

94. It is now the best part of a decade since the introduction of mandatory business registration. A major question for the Review - in the light of experience during this period, and major subsequent developments such as the inception of the ACS for individual operatives and the liberalisation of the gas market - is whether the statutory registration scheme remains necessary and appropriate. Is there a need, for example, to maintain two databases, one for registered businesses and another for certificated operatives? More fundamentally, there is the question of the value added to gas safety by statutory business registration since 1991.

95. The majority of key stakeholders who addressed this issue in the initial bilateral contacts with the Review Team saw a continuing need for mandatory business registration in some form. In some cases this view was predicated on a perception of the need to maintain in place a fairly tight regime to compensate for the loss of overall control and supervision of the industry that had formerly existed under the unitary British Gas but which had become fragmented following liberalisation of the gas market. Others took the view, however, that with the introduction of individual operative certification there was no longer a need to maintain a separate register of businesses.

96. Those in favour of a continuation of statutory business registration have made the following points:

- (i) statutory business registration under CORGI has had some/very considerable success in terms of raising public awareness of gas safety issues and maintaining/raising standards of gas installation and maintenance work;

- (ii) there has been a significant increase in the use of gas over the last decade (from 17 million households to some 20 million currently) without a corresponding increase in gas-related fatalities. One consultee suggested that, in the absence of the statutory registration body, the number of CO poisonings could have been ten times greater than was the case over this period. This is difficult to corroborate from existing data: BSG's analysis suggests that incompetent servicing or installation is implicated as a factor - amongst others - in 11% of fatal or serious incidents, but the data do not show whether or not those doing the servicing were registered or unregistered; nor are there reliable data on the size of the unregistered sector. Accident data do not therefore prove conclusively that registered installers cause less accidents, though it may be thought that the requirement to demonstrate competence should mean that this is generally likely to be true.
- (iii) With the fragmentation of the industry following liberalisation and the immature state of the market, a number of consultees have argued that now is not the time to contemplate removing prescriptive controls, of which the statutory registration scheme and associated inspections form a significant part;
- (iv) As a qualification to iii, there have been certain suggestions that registration might in the future be restricted to businesses undertaking work in the residential sector, on the grounds that specialist industrial work is adequately covered under other legislation. As noted in the Vectra study, large industrial installations in particular are not generic: the equipment tends to be purpose-designed and is normally installed and commissioned by the manufacturers or installers working to the manufacturers' instructions and training. For more on this topic, see Part 9 "Gas Safety (Installation and Use) Regulations", pages 114-150.

97. Those opposed to the continuation of business registration in its present form have made the following points:

- (i) there are major concerns about the cost impact of the present regime on installation businesses, particularly smaller firms and sole traders. This includes the registration conditions and the associated burden of obtaining ACS certification;
- (ii) registration fees have increased substantially since the inception of the scheme in 1990/91, largely as a result of the phasing out of the British Gas subvention following gas market liberalisation in the mid-1990s. One industry association said that, had they foreseen this development in 1990, they would not have agreed to the HSC proposal for a statutory registration scheme funded by registration fees. The proposition was only considered viable on the basis of the 50/50 split with British Gas agreed in 1990;
- (iii) apart from the principle of statutory registration funded by installers, one industry association expressed concern about the cost structure of the present scheme, which was seen as discriminating against self-employed installers, as against larger businesses. The basic registration fee for 1999/2000 was set at £153, whereas the fee for each additional employee is £41;
- (iv) some have claimed that gas safety has not improved significantly as a result of the statutory registration scheme. Furthermore, the costs have allegedly tended to drive experienced installers out of the industry, thereby contributing to a growing skills shortage. Against this, CORGI have claimed that their statistics demonstrate that individual competence has improved since 1995 when the revised qualification criteria were introduced, while skills shortages are mainly attributable to the lack of new entrants/apprenticeships.

- (v) with the advent of individual operative certification, and bearing in mind that a majority of registered installers are sole traders, the emphasis should move away from business registration - subject always to the satisfactory evolution of the ACS regime which has itself been the subject of some criticism in its present form (see section 6). One suggestion is that a way might be found of subsuming business registration within the Quality Mark scheme for construction-related trades on which the DETR has recently been consulting, though current proposals are for a voluntary rather than a statutory scheme.

Question 12 - What are your views on the continuation of the statutory registration scheme? Is it still relevant and essential to the maintenance of gas safety standards? Is it necessary to maintain both a register of installation businesses and a database of individual certificate operatives?

Question 13 - If you are in favour of the continuation of statutory business registration, should this cover the whole field, including commercial/non-domestic work, or focus on the domestic sector only?

Extension of the registration scheme to cover non-gas work undertaken by gas installers

98. Among stakeholders who offered initial comments on this issue, most were not in favour of an extension of the statutory registration scheme, though one professional body considered that the scheme should cover all work associated with combustion appliances. However, both CORGI and HSE are aware, from consumer complaints and correspondence, that members of the public often assume that CORGI registration covers non-gas (eg plumbing and electrical) work carried out in conjunction or associated with gas work, and that the CORGI logo implies some kind of joint guarantee of competence, quality and commercial integrity. This point is also raised in the Vectra study. The present position is that the scope of the registration scheme depends on that of the Gas Safety (Installation and Use) Regulations 1998, which is limited strictly to issues directly concerned with gas safety.

99. It can be, and has been, argued that from the consumer's point of view this distinction appears arbitrary and artificial. The Vectra study calls for the public to be made more aware of the limitations of the statutory scheme. One possibility - short of extending the statutory scheme to cover plumbing and electrical work, which could be difficult to justify on health and safety cost/benefit grounds - might be to set up a voluntary scheme to cover the non-safety critical areas. One suggestion that has been made is that these issues could be addressed through an extension of the DETR Construction Quality Mark proposals to include gas installation businesses. This would entail a change in CORGI's statutory role and status, but would not be incompatible with a continuation of its work in promoting gas safety within the context of a wider Quality Mark alliance.

Question 14 - What are your views on the extension of the registration scheme to cover non-gas work undertaken by gas installers?

The role of the CORGI Council - its influence on Board policy and decisions

100. In pursuit of its objectives as the statutory registration body, CORGI operates in accordance with criteria laid down by HSE. These include provision for the CORGI Board to be accountable to a “Principal Representative Body” (the Council) for the manner in which it discharges its responsibilities. The criteria state that membership of the Council is open to any organization with a bona fide concern for, or involvement in, gas safety, and will be drawn from as wide a constituency as is practicable. The Council consists of up to 101 members, representing employers’ trade associations, employees’ organisations, professional institutions, gas suppliers, training organisations, manufacturers’ associations, consumer organisations, local authority associations and other bodies.

101. Vectra noted in their report to HSE that the Council members interviewed in the course of their study felt that they were not adequately consulted by the Board and that any representations they made seemed to be largely ignored. CORGI decisions were said to be presented to Council members too often as a fait accompli. Some stakeholders have attributed difficulties to an allegedly authoritarian culture and management style on the part of CORGI, though Vectra also noted that this appeared to be historical in many cases, given recent management changes.

102. At the same time, both Vectra and CORGI have noted that some organisations represented on the Council have interests which put them in competition with CORGI in its activities outside those of registration and inspection, with the implication that this is a source of friction between some Council members and the Board. (For more on the issue of CORGI’s non-statutory activities, see paragraphs 113-117 below).

103. One of the specific points of concern put forward is that, while the Articles of Association permit issues to be raised at General Meetings, the conduct of the Annual General Meeting has not until this year been such as to encourage meaningful participation and accountability, with a restricted question time and answers considered to be unhelpful or incomplete.

104. In HSE’s initial contacts with stakeholders, these negative comments have been voiced in the main by employer associations representing those outside the traditional gas industry itself such as plumbing and heating businesses. The absence of meaningful industry involvement at either Board or Council level is seen as a factor in distancing CORGI from the industry. Few specific proposals for change have been put forward by stakeholders so far, other than a review of the constitutional criteria and the appointment by HSE of an independent Chairman perhaps drawn from the government service. The latter proposal would have implications for CORGI’s continuing status as a private company.

105. However, the Vectra report, which takes the view that the CORGI Board should be more accountable to the CORGI Council, has recommended the creation of a Steering Group, whose membership would be drawn from each type of organisation represented on the Council, as a means of facilitating communication between the Council and the Board and promoting consultation between the Board and the main stakeholder groups.

106. Vectra envisage that each type of organisation represented on the Council would nominate one member to sit on the Steering Group, which would be independently chaired, possibly by one of the

CORGI Non-Executive Directors. There would in addition be a place each for HSE and an industry umbrella organisation (VIGIL or its successor) as observers.

107. Vectra emphasise that the scope of the Steering Group would cover only the regulated activities performed by CORGI. It would not extend to CORGI's non-statutory business activities. The Board would report, on a quarterly basis, to the Steering Group on the regulated activities against key performance measures, the setting of which are already a requirement of the existing HSE criteria. Although CORGI's commercial activities would not be covered, financial performance indicators should be such as to enable the Steering Group to distinguish between the regulated and unregulated activities and clearly identify the activities that are funded by registration fees. (The onus would be on CORGI management to show that any activity it considered to be outside the Steering Group's remit was self-financing). This increase in transparency would also help to address concerns about CORGI's non-statutory business activities (see paragraphs 113-117) and CORGI's relations with other stakeholders (see paragraphs 118-123).

Question 15 - What are your views on the CORGI Council's role? Should it have a greater involvement in policy and strategic planning?

Question 16 - If you consider that accountability of the Board to the Council should be increased, do you have any specific proposals as to how this might be effected?

Question 17 - What are your views on Vectra's proposal for the creation of a Steering Group, comprising representatives of the main interest groups on the Council, to mediate between the Council and the Board?

Should there be more than one approved registration body?

108. When the arrangements for a mandatory business registration scheme were put in place in 1990, it was envisaged by HSC/E that only one class of persons or body would be approved, although the legislation was drafted in such a way as not to preclude the appointment of alternative bodies. This issue has so far not had to be considered, since CORGI has been the sole body to come forward with a formal bid for HSE approval to operate a register.

109. HSE is aware of criticisms from within the industry to the effect that CORGI is a private company levying fees for carrying out public functions under what could be regarded as a licensed monopoly. That the 'monopoly' is de facto rather than de jure does not alter its practical effect, say the critics.

110. However, when stakeholders in the initial consultation were invited to comment on the possibility of introducing competition through the appointment of alternative registration bodies, the great majority who responded to this question were not in favour of such a change, largely on the grounds that it could risk confusion on the part of the public now familiar with the CORGI brand and dilute the safety message about using only registered installers. CORGI has pointed out that there would, in addition, be issues of demarcation and duplication of effort to be addressed. One professional body said that "the matter is too serious to be put out to competition."

111. Even some of those critical of CORGI and the way in which it has operated recognised that undesirable complications could arise from the creation of more than one approved body. Some have suggested that CORGI's 'monopoly' might be limited through the separation of its core registration function from its other activities, perhaps through sub-contracting.

112. If there were a move away from business registration to a focus on individual operative certification, the question of multiple business registers would become academic. Even those in favour of radical change saw the need for a single body to maintain a composite database of competent operatives.

Question 18 - What are your views on the approval of more than one registration body? If you consider that competition should be introduced into this area, do you have practical suggestions as to how this might be put into effect?

The non-statutory business activities of CORGI

113. In addition to carrying out its statutory functions, CORGI undertakes certain business activities, including the provision of consultancy services on a commercial basis, through a subsidiary company CORGI Services Ltd (CSL). A significant number of stakeholders in the initial consultation (over a third of those consulted by HSE) had opinions on whether this association between the registration body and non-core business activity was desirable. A majority of those who commented on this issue were critical, though a few stakeholders either had no objection or saw positive benefits for installers if the provision of, for example, competitively-priced insurance deals helped to reduce installers' overheads. One industry association said that CORGI's involvement in commercial activities was acceptable, provided that these were not subsidised by registration fee income and did nothing to detract from CORGI's principal activity.

114. A more commonly-held view was to suggest that the provision of commercial services did not fit well with CORGI's statutory role as the registration body. Several stakeholders questioned the "propriety" of arrangements that in their view allowed CORGI to "exploit" its brand name and special status as the statutory registration body for commercial gain. One service company thought there was a need for CORGI to be able to demonstrate that its consultancy work, for example, was not being subsidised by the fees generated from its business registration activity. This stakeholder went on to say that the absence of full transparency in this area at present had the potential to undermine CORGI's credibility as the statutory registration body.

115. This issue, including lack of transparency, is also identified in the Vectra study. They say that it is not possible from the published CORGI Annual Report and Accounts to determine separate income and expenditure figures for these activities. They therefore conclude that the possibility cannot be demonstrably excluded that the provision of commercial services diverts resources away from the core statutory functions. For example, some commercial activities will involve the inspector workforce. The Vectra study also notes that trade associations have expressed concern about the direct competition to their own activities from a body whose statutory access to the industry is seen as putting it in a privileged position. This highlights the question whether CORGI should be able to exploit a

situation in which use of the CORGI brand-name or logo could give it a competitive advantage in relation to other commercial businesses; and whether it is clear that CORGI's performance is monitored by HSE whereas the activities of CSL, as a separate private company, are not. Whilst it may be argued that oversight of CSL could divide the attention of CORGI top management, there may be some benefit for CORGI's gas safety work (if as suggested CSL subsidises CORGI), and for the wider regime, to the extent that any CSL activities may be broadly safety-related, and help the gas industry to deliver better services to consumers.

116. CORGI is aware of the criticisms in relation to its commercial activities and has made a number of points in response:

- (i) The HSE criteria require the registration body to be funded "primarily", not necessarily exclusively, from registration fees. The commercial activities are run through a separate subsidiary company. So far from being subsidised by registration income, the commercial activities generate a surplus that supports the registration scheme and allows CORGI to engage in additional public awareness campaigns which it would not be able to fund from registration fees alone.
- (ii) On the issue of transparency (paragraphs 114 and 115), CORGI say that separate accounts for CSL are published and externally audited which demonstrate that CSL is not being subsidised through the registration fee income. (This issue will be looked at further during the next stage of the Review).
- (iii) CSL provides support services for installers, many of whom do not belong to any trade association and so would not have access to, eg, competitively priced insurance and other benefits provided by trade associations.
- (iv) The insurance service has raised awareness of the need for installers to carry public liability insurance which was a requirement under the previous voluntary registration scheme but could not be included in the statutory scheme. The absence of such provision led to complaints from consumer bodies and the general public. As a result of CORGI's activities, more installers now carry such insurance, not necessarily provided by CSL itself.

117. CORGI has drawn attention to the fact that recovering operating costs through registration fees, which are subject to the vagaries of the number of registrants in any one year, presents an inherent problem in terms of financial management and business planning. Vectra has also drawn attention to the business planning difficulties created by the fixed 3-year approval periods to which CORGI has been tied by the HSE criteria. Vectra has suggested ways in which the HSE criteria might be changed to give CORGI more stability: for example, approval could be based on a rolling period for a minimum of three years, with an annual performance review to ensure that the HSE criteria were being met. CORGI has made a similar proposal.

Question 19 - What are your views on CORGI's non-statutory business activities?

Question 20 - Do you see any potential conflict or incompatibility between CORGI's undertaking commercial activities and its statutory role? If so, do you see a need for a change in or clarification of the operational criteria set by HSE?

CORGI's relations with other stakeholders

118. One of the issues for the Review is the question whether CORGI's relations with other stakeholders, including consumers and installers, are conducive to promoting gas safety. HSE is aware, from complaints brought to its attention from time to time, that consumers do not feel that CORGI is always successful in discharging the remit set out in its criteria to deal with complaints about the safety of gas work and promote a fair and satisfactory resolution of them. In part this can be due to public confusion as to the narrow scope of CORGI's (and HSE's) remit under current legislation or dissatisfaction with what is sometimes perceived as an artificial distinction between gas and non-gas work associated with the same appliance or system (see also paragraphs 98 and 99 in the section headed "Extension of the registration scheme to cover non-gas work undertaken by gas installers").

119. When the question of CORGI's relations with stakeholders was put to the organisations involved in the initial consultation for this Review, a majority of those who offered opinions on this issue expressed some concerns. These concerns were particularly prevalent among industry associations and certain professional bodies represented on the CORGI Council, and were consistent with the negative comment expressed by some stakeholders on the issue of the role of the Council and its influence on Board policy and decisions (see paragraphs 100 to 107).

120. The same point was picked up in the Vectra Study. Stakeholders on the Council tend to feel that they are not adequately consulted and that they are ignored when they make representations. Some have attributed problems to the management style within CORGI, though one stakeholder told HSE that in its view there had been an improvement recently. These views have also been reflected in some of the official and Ministerial correspondence generated by complaints to their MPs from individual installation businesses in the last two years.

121. One trade association said that its members tended to see CORGI as a heavy-handed 'enforcer', though only in relation to registered installers who were sometimes threatened with removal from the register - and perhaps actually removed - for what were seen as administrative failings rather than for reasons of gas safety competence. This particular organisation called for a better partnership between CORGI and installers to encourage registration and eliminate the non-registered sector. In fairness to CORGI, it must be said that they have themselves called on Government to grant them enforcement powers to enable non-registered installers to be pursued more proactively by their inspectors; this is another important issue for the present Review (see also part 4, paragraphs 84 to 85).

122. Some adverse comment has come from enquirers who have found it difficult to obtain information from CORGI as to the competence of gas installation businesses and their operatives. One organisation said CORGI's telephone helpline was "inaccessible" and that they had experienced problems in obtaining answers to enquiries as to whether particular operatives had passed specific assessments under the ACS.

123. One of the professional bodies represented on the CORGI Council has suggested to HSE that relationships with the industry may have been upset by the introduction of the new nationally accredited certification scheme for individual operatives (ACS), but it looks forward to the day when the scheme

“settles down and simplifies itself”, which it believes should create a “better atmosphere”. Vectra has suggested that relations would also be improved by more openness on the part of CORGI as to its investigatory procedures and criteria for removing installers from the register. Vectra’s recommendation for the creation of a Steering Group, to mediate between the Council and the Board (paragraphs 105-107) would also be relevant here.

Question 21 - From your own knowledge or experience, do you consider CORGI’s relations with other stakeholders to be satisfactory and conducive to promoting gas safety? If you consider them less than satisfactory, do you have any specific proposals for change?

Could some of CORGI’s functions usefully be performed by separate bodies?

124. The issue is related to what some see as CORGI’s de facto ‘monopoly’ under the current regulatory arrangements and the question whether it would be appropriate and feasible to introduce competition in this area. One industry association has expressed the view that the introduction of competition is clearly both desirable and feasible and could be achieved either by appointing alternative registration bodies or by sub-contracting some of CORGI’s functions, eg monitoring and inspection, to other organisations. Some other bodies have agreed that there might be a case for separating the functions of registration and monitoring/ inspection, though opinion on this point seems to be divided, and there has been little support for the idea of creating alternative registration bodies (see also under paragraphs 108 to 112 above).

125. CORGI itself has argued, with some external support, that monitoring and inspection are an integral part of a registration scheme that seeks to ensure the competence of its participants and promote the safety of gas installation work. They have also pointed to loss of economies of scale and flexibility that would follow from a separation of these functions.

Question 22 - Assuming CORGI retains its statutory business registration functions, do you think there is a case for separating this from other activities, such as monitoring and inspection? Do you consider that alternative bodies or sub-contractors could carry out any of CORGI’s functions on a more cost effective basis than at present?

PART 6 - TRAINING AND COMPETENCE CERTIFICATION

The early impact of the new nationally accredited certification scheme for individual gas fitting operatives (ACS) - stakeholders' perceptions

126. The Vectra report says that almost all the organisations that they interviewed expressed concerns about the ACS, and that it probably generated more discussion than any other single topic within scope of their survey. This concern was also reflected in HSE's meetings with stakeholders, though the comment was by no means wholly negative.

127. It should be kept in mind that the ACS has only been introduced comparatively recently as a replacement for ACoP-based training and assessment. For domestic natural gas work, the change came into effect on 1 August 1998. For LPG and non-domestic work, the changeover to ACS assessments has not yet taken place. It follows that only a relatively small proportion of the gas fitting workforce has as yet undertaken ACS assessments, and that much of the comment on the impact of the new scheme is based on limited direct experience. (As at 1 September 1999, 6427 operatives out of a total workforce of just over 100,000 had been certificated under the new scheme.)

128. Much of the concern expressed has related to the length and complexity of the competence assessment process, the consequential cost to businesses and what is seen as a deterrent effect on individual operatives. This said, many stakeholders appear to recognise that the training and certification of operatives as delivered under the ACoP system was less than satisfactory, and that steps needed to be taken to establish more consistent national standards tested by means of more rigorous and independent assessments separated from the training process.

129. One of the professional bodies with interests in this field has told HSE that in its view "much of the criticism that has arisen is quite unjustified, and illustrates the low skill base from which we are trying to rise up to something better". Another stakeholder said that ACS has the potential to make an important contribution, through the competency route, to health and safety in the gas installation industry. However, even these favourable commentators recognised that there had been problems with the introduction and early implementation of the scheme, and that there was scope for improvement without compromising health and safety.

130. CORGI has said that there is a misconception in the gas installation industry that there is no other sector subject to the same burden of costs and competency assessment, and that there needs to be an acceptance that ongoing training and assessment are essential to the maintenance of health and safety standards. It has also pointed out that its remit, given by HSE, was to take responsibility for developing a scheme in conformity with European Standard EN 45013 "General criteria for certification bodies operating certification of personnel" and the requirements of the United Kingdom Accreditation Service (UKAS). Its flexibility is constrained by the requirements of the Standard and its interpretation by UKAS.

131. Critics have pointed out the Standard and the associated European Accreditation of Certification (EAC) guidelines are quite generic. They claim there is therefore scope for a more flexible interpretation of the requirements than is evidenced in the ACS scheme as it has currently evolved. The guiding principle should be that the burden of training, assessment and certification is no

greater than that required to ensure that individuals remain competent to carry out gas work safely. One professional body has remarked that the current regime appears to place gas fitters on a higher level than Chartered Engineers (C.Eng.) and has questioned whether the application of EN 45013 is really appropriate for the gas installation industry. The wider consensus, however, appears to be that it should be possible to develop a more generic, simpler and hence less costly assessment scheme that would still be compatible with the aims of the ACS and the basic criteria laid down in the Standard.

132. Criticisms have tended to focus on the following points:

- (i) The ACS requirements are said to be excessive, and greatly exceed those that would be necessary to satisfy the EN 45013 standard, for example in relation to the steps taken to separate training from assessment.
 - (ii) Some problems are attributed to allegedly limited experience of occupational competency assessment on the part of the drafters of the scheme. The scheme is said not to take account of developments in assessment methodology that have taken place over the last two decades.
 - (iii) Allied to (ii) is the perception that the assessment standards have been determined by CORGI rather than by representatives of the industry itself. The Joint Standards Body (JSB) set up for the purpose of industry participation in the development of the standards is not perceived to have been an effective consultative mechanism and some industry representatives feel that they have not been allowed to play an appropriate part in the creation of the scheme.
 - (iv) Particular problems include:
 - duplication in the assessment structure, including a proliferation of individual appliance assessments, adding unnecessarily to the cost of the scheme;
 - assessments are bureaucratic, lengthy and hence unduly demanding on the examinee, as well as being costly to the industry;
 - the number of questions in the domestic core gas safety assessment could be reduced without compromising standards;
 - the 100 per cent pass mark requirement is seen as a deterrent, even though within certain parameters it is possible to undertake partial reassessments of particular elements where full marks are not achieved first time, without having to undertake a complete reassessment;
- w** duplication of provision in existing vocational qualifications, such as S/NVQs;
- w** ACS burdens, on top of training overheads, threaten to drive installers into the black economy, or out of the industry altogether, thereby exacerbating a growing skill shortage in the industry;
- w** on the other hand, if installers remain in the industry, the assessment infrastructure may be unable to cope with the demand, particularly in the run-up to 2003 when the many assessments taken in 1998 before the closure of the ACoP scheme for domestic natural gas work come up for renewal under the ACS for the first time. Problems include the fact that fewer assessment centres have as yet been approved under the new

scheme than under the ACoP regime, there is a wide range of assessments to be provided for, and the scheme requirements specify a low candidate to assessor ratio;

- W** the proliferation of appliance assessments goes against the trend towards multi-skilling in other fields and may encourage the development of specialists at the expense of more rounded gas operatives who would be more capable of detecting safety-critical problems in the field;
- W** the ACS is not appropriate to the commercial/industrial sector and has little or no contribution to make to safety there.

133. On the complexity of the present assessment structure and the scope for eliminating the elements of duplication, several major stakeholders have called for a more flexible and generic system, and two have suggested that the core gas safety assessment (CCN1) contains the essential generic gas safety competencies that are required, obviating the need for separate appliance-specific assessments. The view has been expressed that the appliance-specific assessments repeat the generic competencies and attempt to deal with matters best covered by manufacturers' instructions (since appliances differ from manufacturer to manufacturer in their installation, service and repair requirements). One stakeholder has suggested that appliance-specific issues might be taken out of the ACS arena and placed on the same footing as other trade competence issues by being included within scope of the Government's Cowboy Builders /Quality mark initiative, depending on how the latter evolves. Another stakeholder has suggested that the ACS arena should be extended to include an understanding of energy efficiency issues.

134. Several stakeholders have raised the question of the relationship between ACS certification and other vocational qualifications in this field. It has been suggested that the rigid link in the current registration rules between registration and the possession of ACS/ACoPs certification should be broken and a range of 'competence options' recognised, underpinned by standards developed through relevant industry organisations. Three stakeholders have suggested that operatives completing relevant vocational training, for example through the S/NVQ route, should be recognised as having satisfied the competence requirements of the law and for CORGI registration purposes without having at the same time to undertake additional assessments under the ACS. A 'refined' ACS could, however, have a role in assessing the competence of experienced fitters who have no formal trade qualifications.

135. In this connection, it has been pointed out that, even though an appropriate S/NVQ is one route to entry into ACS assessment, some assessments go on to cover basic skills already established by the S/NVQ qualification. The Vectra study has identified a need for the industry to agree how to incorporate the objectives of the ACS into S/NVQs so that new entrants are not deterred from coming into the industry. Vectra's view is that it should be possible to devise a simplified assessment process that would be less objectionable to candidates and less costly to employers while still meeting the generic requirements of the EN 45013 Standard. The clause in the Standard relating to the duty of certification bodies to maintain regular surveillance of certificated personnel - interpreted under ACS as a requirement for a full re-assessment every five years - might be satisfied by making provision for operatives who have continuously worked in the field during this period to take a shorter re-assessment. (The EAC Guidance suggests that a full re-assessment is only necessary for persons who have not worked in the professional field for three years.) For career gas operatives the shorter re-assessments, it has been suggested, might concentrate on developments in technology and any changes in legislation.

136. One issue relating to the ACS raised by stakeholders is its relevance to work with large-scale commercial and industrial equipment. An industry association representing employers in this sector has

told HSE that the certification of individual operatives was introduced in response to gas safety concerns in the domestic sector, and that it wants gas work in the non-domestic sector to be fully excluded from the scope of GS(IU)R. One of the professional bodies consulted, while critical of the ACS link, has taken the line that the principle of registration and competency requirements under GS(IU)R should be retained for commercial work and indeed extended to cover work in industrial premises currently excluded from the scope of the Regulations. However, this stakeholder also believes that the need for specific training and assessments on specialised, large-scale equipment must be recognised.

137. Among the points made in justification of special treatment for commercial/industrial equipment are the following:

- (i) Comparatively few gas-related incidents have been recorded in the commercial sector in recent years (see paragraph 200).
- (ii) The great majority of serious incidents relate to CO poisoning. This is generally associated with gas appliances installed within occupied areas of residential buildings.
- (iii) In the commercial sector, appliances are generally installed in separate, ventilated plant rooms and consequently risks from CO are significantly reduced or eliminated.
- (iv) There are basic differences between the business systems and working methods of the non-domestic sector as against those of the domestic sector. Safety management systems currently in place in the non-domestic sector, underpinned by HSWA and supporting regulations, are fully adequate to secure safety in that sector.
- (v) While the prescriptive regime associated with CORGI registration and ACS/ACoP competence requirements may be appropriate for work in the higher-risk domestic sector, particularly in view of the large number of small businesses and sole traders operating there, it makes little or no contribution to safety in the non-domestic sector.
- (vi) For large-scale non-domestic plant, the range and complexity of such equipment is such that the necessary product training ability and knowledge are not available to training/assessment bodies under ACoP/ACS. Operatives certificated as competent for non-domestic appliances with a thermal input measured in kilowatts may subsequently work on equipment where operating temperatures/pressures may be many times greater, with a thermal input measured in megawatts. The commissioning/safety requirements for the latter are held to be entirely different from the former; it is not simply a question of scaling up. The only way to ensure proper training and competence assessment is for this to be carried out by the manufacturer of the equipment concerned. Should the link with GS(IU)R be retained, it would be necessary to create a special registration category, ie for industrial equipment fitters, with provision in the ACoP for competence to be assessed in the way proposed.

138. Regarding the cost impact of ACS on gas installation business, one industry association estimated earlier in 1999 that the cost per operative to its members would be between £1330 and £2370 (not including VAT) plus the economic cost of up to 12 days required for training and five days for assessments. This would be the cost over the five-year life of ACS certificates. Another industry association has produced an estimate of an annual cost to the industry of £66.5 million.

139. It has been pointed out to the industry associations that under ACS it is possible for experienced individuals to be assessed under the new scheme without being obliged to undertake a

training course, thereby saving on training costs. However, there is a perception among some stakeholders that, given the structure and complexity of the current assessments, in practice few people will be able to obtain an ACS certificate without some form of pre-assessment training, even if they possess the practical skills and experience to enable them to undertake gas work safely.

140. The cost issue is seen as particularly problematical for small plumbing businesses, for whom gas fitting may be a relatively small part of their work, but who will still need to meet the CORGI registration and competence requirements. The impact will be more severe than for large businesses, where the number and frequency of gas-related jobs will enable registration and certification costs to be spread and more readily recouped.

141. One stakeholder is critical of the fact that in many cases providers of training and assessments have approached the matter as a commercial opportunity, and that prices are determined by market forces. This was also the case under the ACoP scheme but there is concern that the ACS scheme is more expensive and that the increased costs will be passed on to customers. This in turn could encourage recourse to non-registered installers or DIY work. Against this, it is possible to argue that, with the increase in the number of certification bodies and approved centres since the launch of the ACS last year, market forces should begin to exert a downward pressure on the prices being charged for assessments. And, as noted earlier, there may be scope for simplifying or streamlining the scheme, through the elimination of duplication, which would help to reduce costs.

Question 23 - Do you have comments on the early impact of the new certification arrangements?

Question 24 - Do you have comments on the effects on businesses of the costs of training and competence certification?

Question 25 - Do you consider that there is a case for refining or simplifying the scheme in any way? If so, do you have any specific proposals?

Question 26 - Do you consider that there is a case for treating competence assessment in the domestic and the non-domestic sectors in different ways? If there is a case for maintaining the current assessment arrangements, with or without refinements, in the domestic sector, is this approach appropriate for large-scale commercial or industrial plant? If the scope of the scheme should be limited in some way, would it be practicable to define this in terms of the input/output of appliances?

Question 27 - Do you have views on the relationship between the ACS and existing vocational qualifications such as S/NVQs? Is there excessive duplication, and if so how can the systems be dovetailed more effectively?

Other issues

The role of CORGI in the accreditation process

142. Another issue raised in the early consultation with key stakeholders was the question whether CORGI (or any other registration body) should have a role in the accreditation of certification bodies.

143. The historical position is that the criteria for a registration body were revised in the light of the recommendations in the Touche Ross report of 1995, so as to require the registration body to take responsibility for developing a nationally accredited certification scheme for the initial and continuing competence of individual gas fitting operatives, based on a 'blueprint' prescribed by HSE. This blueprint required CORGI among other matters to assist aspirant certification bodies in approaching the accrediting organisation UKAS and, correspondingly, to offer UKAS whatever help the latter might need in order to take on this new field of work. CORGI currently provides technical expertise to UKAS, on a commercial basis. UKAS is not bound to accept CORGI's advice and in principle could turn to other sources of technical expertise if it wished.

144. Opinions on this issue given by stakeholders in the early consultation with HSE were mixed, although a majority of those who expressed views considered that CORGI's role as adviser on the technical aspects of the accreditation process was acceptable.

145. Those taking a contrary view seemed to feel that there was a potential conflict of interest between CORGI's function as registration body and custodian of the database of certificated operatives on the one hand and their role as adviser to UKAS on the accreditation of certification bodies. One critic said that the current arrangement only came into being because UKAS lacked the in-house technical expertise to carry out accreditation at the time when it was needed, and that consideration should now be given to the appointment of independent consultants or, possibly, a professional body with expertise in the industry such as the Institution of Gas Engineers.

Question 28 - Should the registration body have a role in the accreditation of certification bodies? Do you see any potential conflict of interest? If so, do you have views as to the alternative sources of technical expertise to which UKAS might turn?

The relevance of HSC's Approved Code of Practice (ACoP) on standards of training in safe gas installation

146. Stakeholders in the early consultation were invited to comment on the continuing relevance of the ACoP following the introduction of the ACS. The great majority of those who expressed views on this issue saw a continuing role for the ACoP, subject to updating to take account of changes in legislation and the introduction of the ACS. Some stakeholders pointed out that the ACS only provided for assessment and did not cover the training needed to achieve an acceptable level of competence.

147. Several stakeholders drew attention to the importance of the ACoP in defining competence objectives for gas work in industrial premises, which is outside the scope of the current GS(IU)R but still subject to the requirements of HSWA and supporting across-the-board regulations.

Question 29 - What are your views on the continuing relevance of the ACoP following the introduction of the ACS? Is it useful or appropriate for the HSC to publish a document defining the standards expected for the training of competent gas installers?

PART 7 - CONTROLS

DIY gas work

Present position

148. While the current Regulations do not specifically prohibit DIY gas work, people undertaking DIY gas work are still required under the Regulations to have the necessary competence to do this safely, even though CORGI-registration is not applicable. In general, DIY gas work is strongly discouraged, e.g. in HSE gas safety publicity, and the use of a registered gas installer is advised for all gas work.

149. Several specific initiatives have also been taken in this respect, e.g. following approaches from HSC/E, most DIY retailers now provide point of sale information and offer advice about competency and the use of registered installers; some have voluntarily restricted the sale of gas appliances and spare parts only to such installers. Some industry bodies, e.g. representing gas installers/appliance manufacturers are also seeking to develop a voluntary scheme to restrict supply of gas fittings only to those people who are competent to undertake installation work safely.

Views expressed

150. There was a general perception amongst those interviewed that DIY gas work continues to present a significant hazard and that further action is required in order to curb it; there is some evidence to support this view based on HSE's and other external analysis of gas incidents. Although some expressed the view that the limited number of reported incidents suggests it might not be a major problem, others believed such statistics to be unreliable in this context, as accidents/near misses related to DIY would often be likely to go unreported. The views generally expressed on DIY were also reflected in the results of the MORI survey which showed over 90% of those polled were against the idea that DIY gas work should be allowed, and 70% strongly disagreed.

151. Opinions were more divided over what further action was required, and while some argued for a legal ban on DIY gas work, most felt that strengthening of existing voluntary controls would be more appropriate, coupled with greater publicity about the dangers of DIY gas fitting work. This view was again broadly consistent with the results of the MORI survey which registered a clear majority (67%) for people being informed about safety risks in the home, rather than being forced to take precautions for their own safety. However, some have argued that the latter is not entirely valid here as DIY gas work is not just about people's own safety, but could affect the safety of others, e.g. in event of an incident arising from shoddy work (see below).

152. The following proposals have been put forward:

- (a) introduce a specific legal prohibition, e.g. by restricting sale of gas equipment to registered installers;

- (b) require sale of gas equipment to be recorded and notified by the retailer to a central body, perhaps CORGI. In addition, it has been suggested by some that the body concerned should arrange for inspection of installation work where this is to be done other than by a registered installer; this would include DIY work and non-registered gas installers;
- (c) increase publicity to discourage DIY work. It is argued that extra effort should be made to publicise dangers of DIY gas work, e.g. in HSE campaigns and guidance, as well as through industry channels, such as appliance manufacturer's instructions.

Supporting arguments

153. The following points have been put forward in support of taking further action on DIY, as above:

- W** firm action is required to curb DIY gas work as this presents a significant hazard to the public. Published statistics showing few accidents from this source do not tell the full story as incidents and 'near misses' from DIY are most likely to go unreported;
- W** DIY gas work is not just a question of 'individual risk'; faulty DIY work can present considerable danger to many people, e.g. if an explosion or CO incident results from faulty work in a block of flats, or houses are sold on;
- W** the formal recording of gas equipment sales (with the implication that the person responsible for installation could be readily identified in event of subsequent problems) would help to discourage both DIY and work by non-registered installers (see paragraph 159e). It would also have long term value in supporting a more proactive approach on gas safety, e.g. in follow-up action where subsequent problems are encountered with a particular appliance. A similar approach is operated in Denmark.

Opposing arguments

- W** banning sale of gas equipment to members of the public would represent an unacceptable infringement of civil liberties;
- W** a legal ban on DIY gas work would be illogical from a safety standpoint, bearing in mind that there are many activities, e.g. car servicing, which if done incorrectly may present a similar (or even greater) potential risk to the public, but which are not legally controlled;
- W** any such restriction on the sale of equipment complying with the Gas Appliances Directive (as implemented in the UK by GASR) is likely to be regarded by the European Commission as a barrier to trade, ie because it would hamper the 'putting into service' of appliances and thereby contravene the Directive. This could lead to infraction proceedings being initiated, forcing the removal of such controls;

- W** banning sale to the public would be impracticable both because of the difficulties it would present to the retailer, e.g. for insisting on proof of registration (e.g. the installer identity card) at the point of sale, and from the enforcement standpoint. Similar difficulties would be encountered with the proposal for a record of sale, given the problems in ensuring reliability of information provided by purchasers, e.g. on who would be installing equipment. On the question of enforcement, it has been separately argued that difficulties could possibly be addressed in part by giving CORGI/Trading Standards Officers a role in policing controls;
- W** further controls, e.g. banning sales or keeping records would place additional burdens on gas equipment retailers. Costs might need to be passed on to customers;
- W** forcing gas consumers to buy gas appliances through registered installers could drastically reduce the number of retail outlets, which would be likely to cause a contraction in the market for gas fires etc. This would encourage price inflation due to lack of retail competition. Such a change would constitute a restrictive practice, and might ultimately threaten the future viability of some gas appliance manufacturers;
- W** the proposals for record keeping and arranging follow-up action in cases where gas equipment is not to be installed by a registered operative would place further significant burdens on CORGI, if it became the body responsible in this respect. Associated costs, as well as those for inspection of installation work, where necessary, would presumably have to be passed on direct to the 'customer' or absorbed through increased registration fees to gas installers.

Way ahead

154. The question of whether any legal control could or should be applied to sale of gas equipment to the general public would be for DTI (Consumer Safety) rather than HSE to decide. The question of EC legal implications (as discussed earlier) would be a key factor, and in any case further consultation might be necessary in developing a final approach. However, views are now requested on the issues of principle, as below.

Question 30 - Your views are requested on whether:

- a) DIY gas work should be legally prohibited, e.g. by restricting sale of gas equipment to registered gas installers;***
- b) retailers should be legally required to record sales of gas equipment and to pass these on to a central body, perhaps CORGI;***
- c) any central body selected for this purpose should be required to arrange for inspection of gas installation work in any case where the record of sale suggests this will not be carried out by a registered installer;***
- d) irrespective of your view on the need for further legal controls on DIY gas work, that increased publicity should be given on the dangers of this work, (i) by HSE campaigns, (ii) warnings in manufacturer's instructions for gas equipment, or (iii) other means (please specify).***

Non-registered gas installers

Present position

155. The Regulations require any gas installation business, whether an employer or self-employed, to be a member of a 'class of persons' approved by HSE, i.e. CORGI-registered under current requirements. HSE will normally take a prosecution for non-compliance in this respect where there is evidence of unsafe gas work being done by a non-registered installer, as it would in the case of a registered one. Inspectors will at least write to non-registered installers brought to their attention, reminding them of their legal obligations, and seeking confirmation that they will cease gas fitting work until registration has been obtained, and serve improvement notices to secure registration if no satisfactory reply is received.

156. Under GS(IU)R (regulation 4), a duty is placed on employers/self-employed persons, e.g. where in control to any extent of gas work, to take reasonable steps to ensure that the person carrying out that work is, or is employed by a member of an HSE approved 'class of persons', i.e. CORGI-registered. No similar duty is placed on private gas consumers in this respect.

Views expressed

157. Many of the key stakeholders consulted pointed to a close link between the issue of non-registered installers and wider questions, e.g. (a) the burden of the present CORGI regime and how this might discourage firms to register, and (b) the practical relevance of registration, given an increased emphasis on individual operative competence and possible introduction of an 'all industry' Quality Mark. These issues have been separately addressed (see paragraphs 94-97).

158. On the specific question of controlling activities of non-registered installers, most recognised that there is little hard evidence on the scale of activity of these installers or incidents related to their work. (HSE's information is mainly limited to situations where unsafe work done by a non-registered installer has resulted in an incident or a specific complaint made to them). However, the general view was that little comfort could be drawn from these facts (e.g. because of a general perception that problems might often go unreported), and that non-registered gas installers continue to pose a major threat to gas safety. Particular concern was expressed, e.g. by industry bodies representing gas installers, over the way in which the activities of the non-registered sector might threaten the livelihood of law-abiding companies, and thereby risk undermining the registration regime itself. The introduction of the CORGI identity card, and the associated publicity given to it was felt to have been a positive step. However, it was generally considered that much stronger action is needed to curb the activities of the non-registered sector.

159. The following proposals have been put forward:

- (a) more effort should be made to track down non-registered installers, e.g. by sampling exercises (for instance, based on adverts in Yellow Pages) and requesting 'intelligence' from registered installers (CORGI indicate that they are already making efforts in this direction);
- (b) firmer action should be taken against non-registered installers. It is argued that prosecution should more frequently be taken, even where work has not resulted in an incident (i.e. instead

of the current approach of issuing an enforcement notice in those circumstances), and that courts should be exhorted to impose stiffer penalties;

- (c) authorities should press for maximum publicity on all forms of action against non-registered installers. HSE's current efforts to publicise prosecutions both locally and nationally (see paragraph 65) were acknowledged. However while accepting that prosecution might not always be necessary to secure compliance with GS(IU)R, some bodies were concerned that only prosecutions tend to attract publicity. They argued that more publicity should also be given, e.g. to sending of official letters and issue of enforcement notices to non-registered installers, and that published statistics should be extended to give more details in this respect;
- (d) legally require all gas consumers to ensure that any company they engage to carry out gas work is CORGI-registered. It is argued that the present duty on employers/self-employed persons should also be extended to private gas consumers;
- (e) require sale of gas equipment to be recorded by the retailer and notified to a central body, perhaps CORGI. It has been suggested by some that the body concerned should arrange for inspection of installation work where this is to be done other than by a registered installer. As with DIY (see paragraph 152b), it is argued that this would make a positive contribution towards discouraging activities of non-registered installers generally;
- (f) give limited enforcement powers to CORGI inspectors to take action against non-registered installers. This is partly linked to the question of completion certificates (below); the general issue of enforcement powers and role of CORGI inspectors is discussed in paragraphs 84-85;
- (g) require completion certificates to be issued for all gas work. It is argued that a certificate (along the lines of the landlords' safety check record) should be required on completion of gas work, confirming compliance with the Regulations and giving details of the gas installer, including registration information (see also paragraphs 169-173). CORGI argue that they should take a major role in policing such a requirement, and be able to take enforcement action, e.g. where a valid certificate is not provided;
- (h) the public should have direct access to the CORGI database of registered installers. It is argued that a such a facility would promote the use of registered installers. However, others have argued that there are legal and contractual obstacles to this approach, e.g. concerning data protection, and that there might be difficulties in always ensuring information is kept up to date.

Supporting arguments

160. The following points have been put forward to support the need for further action against non-registered gas installers, as above:

- W** the activities of non-registered installers pose a direct threat to public safety. The fact that there is limited hard evidence of dangerous work being done is largely irrelevant because of the limited effort made to monitor the activities of these installers and the fact that related incidents/'near misses' might go unreported;
- W** the activities of non-registered installers are perceived as not only threatening the livelihood of (especially small) law abiding registered companies (i.e. who cannot

compete on a cost basis), but in so doing also to risk undermining the registration regime as a whole. Existing levels of action against the non-registered sector are regarded as not commensurate with these risks;

- W** it is unfair for the work of registered installers to be closely monitored by CORGI, when non-registered companies, escape this simply because their activities are more difficult to detect. Against this it has been argued that HSE will be likely get to know (and therefore be in a position to take enforcement action) if something goes wrong, whether through the work of a registered or non-registered installer;
- W** the present law which only applies a duty for ensuring a gas business is CORGI-registered to employers/self-employed persons is anomalous and ineffective, when no similar requirement is applied to private gas consumers who commission the majority of gas work;
- W** giving increased publicity to all forms of action against non-registered installers, including warning letters and enforcement notices as well as prosecutions would both help to reassure operators of a firm response being made by the authorities and warn non-registered installers that there is a real possibility of them being called to task;
- W** a system of recording sales of gas equipment and notification to a central body, e.g. CORGI (with follow-up action by them to arrange inspection of installation work as necessary) would positively encourage people to use registered installers to carry out gas work, i.e. at the expense of both DIY and the non-registered sector. Requiring completion certificates for gas work would have a similar positive effect. One of the main reasons would be that both these measures would make it easier to identify the person responsible for installation work, e.g. in event of a subsequent problem;
- W** CORGI are probably in the best position to take proactive initiatives against non-registered installers, as they can call on 'intelligence' from their member companies. This is a good reason for providing CORGI with limited enforcement powers which they could use accordingly. Similar powers (i.e. for issuing enforcement notices against non-registered or incompetent installers) have been given in respect of CORGI's activities in the Isle of Man (see also paragraph 84).

Opposing arguments

161. The following points have been made against taking further action as proposed:

- W** although there are problems obtaining hard information, current data (e.g. on incidents) suggests that the risk posed by activities of non-registered installers is not sufficiently high to warrant a major reallocation of HSE resources in that direction. In particular, proactive enforcement initiatives involving the tracking down of non-registered companies would be very resource intensive and significantly detract from the other essential work of inspectors;
- W** the question of prosecution policy in respect of non-registered gas installers depends to a large extent on the attitude of the courts, which is outside HSE's remit. Unless courts are convinced that failure to register is more than just a 'paper offence' (i.e.

warranting a minor penalty), it would be counterproductive to take prosecutions in situations where there was no accompanying evidence of unsafe gas work, indicating risks to the public - a key factor in HSE's decisions on enforcement action. Against this it has been argued that representations should be made, e.g. to the Lord Chancellor's Office, to remedy any such problem (such representations have in fact already been made);

- W** it would be impracticable to enforce a duty on private gas consumers to ensure any gas business they engage is CORGI-registered, given the 20 million gas consumers involved;
- W** as discussed under DIY (paragraphs 152-153), there would be practical problems in operating and enforcing a requirement for sale of gas equipment to be recorded and notified to a central body such as CORGI, as well as associated cost burdens, e.g. on retailers;
- W** again, as with DIY, a requirement for the central body to arrange for inspection of any installation work, where not to be done by a registered installer, would be difficult to operate, and place significant cost burdens on CORGI, if it was made responsible for such action. These costs would presumably have to be passed on direct to the 'customer' or absorbed through increased registration fees to gas installers;
- W** there are reservations about giving enforcement powers to CORGI, e.g. because of their limited experience in administering the law and their status as a private company rather than a government body or agency.

Question 31 - Do you consider that further action needs to be taken to curb the activities of non-registered gas installers?

Question 32 - If so, what are your views on proposals (a)- (h) in paragraph 157 for dealing with this matter (if you have any other suggestions for further action please give details)?

Servicing and annual safety checks on gas appliances in owner-occupied premises

Present position

162. Under the current Regulations, duties to maintain safely gas equipment are only applied to employers/self-employed persons (regulation 35) and landlords (regulation 36); for landlords the maintenance duty is supplemented by the annual safety check requirement. There are no similar requirements in respect of owner occupiers of private houses etc, but HSE recommends that all gas equipment in domestic/residential property generally should be properly serviced/maintained and annually checked for safety, even where there is no specific legal requirement in this respect. (NB. In the following discussion of this topic, a distinction is made between 'safety check' and 'service/maintenance' of gas equipment. The former is taken to comprise checks/examinations similar to those required under the existing landlords' safety check under GS(IU)R regulation 36, whereas the

latter means test/examinations and remedial action (including dismantling of equipment and cleaning/replacement of components as necessary), to ensure the ongoing safe operation of equipment in accordance with manufacturers' instructions).

Views put forward

163. Most of those interviewed pointed to proper servicing of gas equipment as a key factor in reducing gas incidents, and felt this to be equally important for appliances in private households, as elsewhere (e.g. rented property). The same view was reflected in the MORI survey which indicated that a large proportion (81%) of those interviewed had their boiler serviced annually or more often, although the proportion was somewhat lower for fires (64%), cookers (29%) and water heaters (74%), and the industry have suggested that these figures are higher than their experience suggests. Opinions about the risk from lack of servicing were supported by the BSG survey which showed this to be the single largest contributory factor in the gas incidents studied; it resulted in 41 incidents (including 23 fatalities), which is 25% of the total in the years 1996/97-1997/98. Although a disproportionate number of these incidents occurred in rented property, those in the non-rented sector still amounted to 24, which included 12 fatalities.

164. Views were more divided on the question of whether servicing of gas equipment in owner-occupied property should be required by law. Of those who supported legal control, most favoured an approach of requiring the gas supplier to make supply of gas conditional on customer's appliances being adequately serviced and annually checked for safety; it was suggested that such a control might be applied through OFGEM licence conditions, although some pointed to possible difficulties here (e.g. in ensuring access to property by gas suppliers to make the necessary checks) and to the fact that a different approach would be necessary for LPG, as supply of this gas is mainly exempted from the Gas Act licencing regime. An alternative approach of placing a duty, e.g. on gas consumers, to have equipment serviced received less support as many felt this would be impracticable to enforce in view of the 13 million or so private households involved. Others interviewed felt the question of appliance servicing/safety checks in these circumstances should be addressed by increased publicity, rather than legal control. The latter view was also generally reflected in the MORI survey which showed that, while a large majority (91%) of those interviewed agreed that gas users should take greater responsibility for the safety of their gas appliances (58% strongly so), most (i.e. 67%) considered that the Government should not force people to take precautions for their own safety. However, some have argued that this point is not entirely valid here as the question of ensuring gas equipment is properly serviced is not just about the user's own safety, because other people can be put at risk from an incident involving poorly maintained gas equipment. A further suggestion was made that incentive for carrying out an annual safety check and servicing of gas appliances might be given through conditions of house insurance or mortgages.

165. A significant number of those consulted argued that the gas supplier should bear some financial responsibility for annual safety checks or servicing of customers' appliances in owner-occupied property (see below). This view might also be seen as broadly reflected in the MORI survey where only 27% of those interviewed felt that gas bills should be increased to pay for better safety whereas 66% disagreed (half of these strongly so); and 87% believed that the gas industry should do more to promote safety.

Supporting arguments

166. The following arguments have been put forward for legally requiring gas equipment in owner-occupied property to be adequately maintained and/or annually checked for safety:

- W** the number of incidents due to lack of servicing show that existing approaches of guidance/publicity are not enough. The continuing risk is sufficient to warrant legal control;
- W** there is already a similar legal control in several other European countries, e.g. Denmark and Germany (see paragraphs 15-16);
- W** the current legal situation is anomalous as the risk where gas equipment is not properly serviced is the same, whether in rented or owner occupied property. The position for owner-occupiers should therefore be brought more closely in line with existing controls on landlords.

Opposing arguments

167. Views put forward against imposing a legal requirement for annual servicing/safety checks are:

- W** although lack of servicing/safety checks is responsible for a significant proportion of gas incidents, it accounts for a very small proportion of overall risks in the home. When activities much higher up in the hierarchy of home risks (e.g. DIY generally), and risks from non-gas fuels, are not legally controlled, the introduction of such draconian measures to require gas servicing cannot be justified;
- W** sufficient safeguard against unsafe gas equipment is already provided by GS(IU)R regulation 34, which prohibits the use of any gas appliance which is known or suspected to be dangerous. This duty applies to the responsible person for any premises, including private 'owner-occupiers';
- W** a duty on private householders to have safety checks/servicing carried out on their gas equipment would represent an unacceptable infringement of civil liberties. Against this, others have argued that this is not just a question of people being free to decide on individual risk exposure as many can be injured as a result of incident where gas equipment has not been properly serviced, e.g. in a block of flats, even though such events are extremely rare;
- W** a duty requiring occupiers of owner-occupied property to have their gas appliances properly serviced and annually checked for safety would be impracticable to enforce, in view of the 13 or so million private households that would be involved. Against this, it has been argued that control applied through the OFGEM gas supplier licence would not be subject to these difficulties (although some other problems would exist with this approach, e.g. for LPG - see paragraph 164);
- W** any legal requirement would be unworkable, as the resulting demand for work (i.e. from 20 million gas consumers, if work associated with existing landlords' duties is also included) could not be met by the existing workforce of some 100, 000 certificated

operatives. It has been argued that this might be addressed by delaying introduction of any law to allow sufficient installers to be trained;

- W** the cost burden (with typical annual safety check charges of between £50 and £100 per appliance, and service costs in addition) would be unacceptable for many, particularly people on low income. Even those supporting legal control felt this had to be conditional on financial support being given to vulnerable groups, including elderly people and single parent families. It was argued here that current gas care registration schemes do not go far enough as, although they provide free annual inspection of gas equipment, the problem of funding repair/service still remains (although gas care registration schemes generally make provision, e.g. for emergency heating, it was also argued by some that arrangements in practice are not always effective and that where an appliance is found to be defective and its gas supply is cut off, there is still a fear that the consumer might be left without means of cooking or heating). With regard to cost reduction measures, some bodies referred to the possibility of developing a basic safety check, aimed at providing a uniform 'standard' across the country, possibly along the lines of the landlords' annual safety check under GS(IU)R (e.g. the Gas Consumers Council have been exploring this with CORGI). Some have suggested that such a check might cost around £10-20; however, others considered that it would be unrealistic to hold costs at such a low level, given the massive demand if a legal requirement was introduced. Views were also expressed that gas suppliers, under a 'duty of care', should bear the cost of servicing (or at least annual safety checks) for customer's gas equipment either generally, or for people on low income;
- W** there is little incentive for making house insurance or mortgages conditional on gas equipment being serviced and checked for safety as, laying aside difficulties in administering such provision, most gas incidents do not cause significant material damage to buildings.

Way ahead

168. The question of whether a legal requirement (i.e. for gas equipment to be adequately maintained and/or subjected to an annual safety check) might be applied through gas supplier licence conditions, and on pricing policy, i.e. whether any burden placed on the gas supplier should be passed on to gas consumers in an increased price of gas, would be for DTI/OFGEM, rather than HSE, to decide. Further consultation might therefore be necessary in developing a final approach. However, views are now requested on the issues of principle, as below.

Question 33 - What are your views on whether gas equipment in domestic 'owner-occupied' premises should be required by law to be (a) annually checked for safety, or (b) maintained in a safe condition, or (c) both annually checked for safety and maintained in a safe condition?

Question 34 - If you agree that gas equipment in 'owner-occupied' premises should be required to be maintained in a safe condition, do you feel that (a) annual servicing of gas equipment

should be prescribed in this respect, or (b) that it should be left to the dutyholder to decide (e.g. from equipment manufacturer's instructions) on the detailed requirements for maintenance?

Question 35 - If you believe that a legal requirement should be introduced to require annual safety checks and/or servicing/maintenance of gas equipment, as above, do you consider this should be done by: (a) placing a duty on gas consumers to ensure requirement(s) are met, or (b) placing a condition on gas suppliers (e.g. through their operating licence) not to supply a customer with gas, unless requirement(s) met, or (c) that the requirement should be applied in another way (if so, please specify how)?

Question 36 - Do you consider that gas suppliers should be made responsible for ensuring their customer's gas equipment in owner-occupied property is (a) safely maintained (e.g. by being serviced annually) or (b) subjected to an annual safety check or (c) both safely maintained and subjected to an annual safety check?

Question 37 - If you feel that gas suppliers should be made responsible for servicing and/or safety checks, do you consider that this should apply in respect of (a) all customers in domestic 'owner-occupied' premises, or (b) only to people on low income, e.g. single parent families, elderly people or the chronically sick?

Question 38 - What are your views on whether: (a) insurance companies and building societies should be exhorted to provide incentives for ensuring gas equipment is properly maintained and annually checked for safety through conditions of house insurance policies and mortgages, and (b) more publicity should be given to the importance of ensuring such maintenance and safety checks are carried out?

Records of safe installation and servicing

Present position

169. The current Regulations apply very detailed and prescriptive requirements for recording the landlords' annual gas safety check (regulation 36). However, in contrast, there is no requirement to record other tests/examinations, e.g. when gas appliances are initially installed (regulations 26 and 33), or for maintenance purposes (whether in respect of employers/self-employed persons' or landlords' duties, i.e. regulations 35 or 36). For instance, in the case of rented property, there is no requirement in GS(IU)R for written confirmation that an appliance has been installed in compliance with the Regulations; a record is only required when the annual safety check is carried out, i.e. up to 12 months after the appliance/flue installation. However, the keeping of additional records in these circumstances might sometimes be required in order to meet the general provisions of HSWA and related Regulations,

e.g. MHSWR and CDM, and in the proposed revision of Approved Document J under Building Regulations, a standard record form is specified as a means for demonstrating that installation of gas (and related) services/equipment complies with those Regulations (NB under proposals to include electrical safety provisions under Buildings Regulations (requirements already exist in Scotland), a similar 'completion certificate' would be required to show that installation had been carried out to the relevant standard).

Views expressed

170. Several bodies have argued that the current position on records under GS(IU)R (i.e. focusing wholly on the landlords' safety check) is anomalous, and extra provision should be made in the Regulations, e.g. to provide specific assurance to customers that work has been safely carried out.

171. The following proposals have been put forward in this respect:

- (a) completion certificates should be required for all gas work. As noted under action to curb non-registered installers (paragraphs 155-159), it is argued that a certificate, i.e. along the lines of the landlords' safety check record, should be required on completion of gas work, confirming compliance with the Regulations and giving information on the gas installer, including registration details. Some have suggested that this record should also include the detailed results of specific tests/examinations, e.g. on the air supply, flue operation, operating (gas) pressure and safety controls. Those supporting a requirement for flue gas analysers (see paragraphs 189-192) have specifically proposed that a quantified record of flue performance should be required. It has also been suggested that supply of gas should be made conditional on appropriate completion certificates being provided, at least for new buildings, which would be in line with current test requirements under GS(IU)R regulation 33;
- (b) a record should be required of the full installation and service history of gas equipment in any premises. This would effectively require a log book to be kept, covering initial installation records (e.g. as required for demonstration of compliance under Building Regulations), completion certificates (as above), and full service/maintenance data. This proposal ties in with the recently introduced industry 'Benchmark' Code of Practice which requires a log book to be provided with each central heating boiler (under an extended warranty scheme), to contain installation, commissioning and service records; this is concerned with both safety and fuel efficiency aspects. Furthermore there is a possible link with the Government's recently announced proposals for making home buying and selling easier in England and Wales¹³. These include requiring the property seller (or agent/adviser) to put together a pack of standard documents/information for prospective buyers (i.e. a 'seller's information pack'), including copies of title documents, replies to searches, warranties/guarantees, a house condition report and draft contract and other relevant information. A suggestion has been put forward that the 'seller's pack might include safety information, e.g. gas and electrical equipment installation/service records. (also paragraphs 180 to182).

Supporting arguments

172. The following points have been made in support of these proposals:

¹³Home Buying and Selling: A Faster and More Efficient System; DETR Press Notice, 11/10/99

- W** records of gas installation/maintenance work, including results of tests and examinations are crucial to demonstrate to customers that this work has been properly carried out and their equipment is safe to use; they also are necessary to provide an assurance to the gas supplier that it is safe to supply gas to premises;
- W** records of gas work are important to provide information to home-buyers about the safety of equipment before property changes hands (see also paragraph 182);
- W** records can assist in providing a proper basis for inspection and enforcement of requirements under GS(IU)R, e.g. maintenance duties;
- W** a requirement to issue a completion certificate (i.e. signed by the gas installer) would help to encourage a higher standard of gas safety and provide a greater 'discipline' for ensuring the necessary safety tests and examinations are carried out.

Opposing arguments

173. Views put forward against the above proposals are:

- W** although gas installers might initially issue records, there is a significant risk of these subsequently being mislaid by customers. The idea of keeping a long-term log of all gas installation/maintenance work in a secure place would be unrealistic for many people;
- W** it would be an example of excessive Government interference in people's lives;
- W** laying aside practicalities, the logging of a full history of gas installation/maintenance work is unlikely to have much safety value, as initial (old) records will be superseded over a period of time - even the landlords' safety check record is only required to be kept for a period of 2 years;
- W** a requirement for records to be issued would place an additional burden on gas installers, which is likely to be passed on in increased costs to the customer;
- W** it would be impracticable to enforce a general requirement for records of gas work in view of the 20 million gas consumers who would be affected. However, against this it has been argued that CORGI should have a role, e.g. in policing 'completion certificates'.

Question 39 - What are your views on whether:

(a) a certificate should be issued by gas installers on completion of any work (e.g. installation, repairs and maintenance of gas appliances/fittings), including results of

tests/examinations, confirmation that the work has been carried out in accordance with the Regulations, and information on the gas installer, including registration details;

(b) a record (e.g. log book) should be maintained by each gas consumer, including original installation data, completion certificates (as above), and the full service history of their gas equipment;

(c) a record should be kept by the consumer of the information as in (b) above, but only for a period of two years after the work concerned has been carried out;

(d) any of the proposals for completion certificates or log books/records in (a)-(c) above should be required by law, or simply recommended as good practice;

(e) whether supply of gas to premises, e.g. new buildings, should be made conditional on the appropriate completion certificates for gas work being provided;

(f) any legal requirement for a 'completion certificate' and/or for a record/log book to be kept should apply to gas work in (i) all premises covered by the Regulations; or (ii) non-domestic premises only, or (iii) domestic premises only, or (iv) only rented residential accommodation covered by existing landlords' duties under GS(IU)R, or (v) a combination of the premises in (ii)-(iv) (please specify).

Landlords duties

Present position

174. The current Regulations place important and wide-ranging duties on landlords, e.g. to ensure gas equipment provided for tenants' use is properly maintained, and checked annually for safety by a registered gas installer. These specific and prescriptive duties, which were introduced in 1996 following a number of serious gas incidents in rented accommodation, were reenacted (with some amendments) by the 1998 Regulations. The duties to protect tenants' safety under GS(IU)R are in addition to the more general ones that landlords (as employers/self-employed persons) have under HSWA and related Regulations, e.g. MHSWR, which are also applicable to gas safety (see paragraph 244(i)-(ii)). HSE is responsible for enforcing all of these requirements in domestic accommodation.

175. In addition to the above, there are separate duties on landlords to maintain certain gas installations (including common services) under housing and landlord/tenant legislation, e.g. the Housing (Management of Houses in Multiple Occupation) Regulations 1990 and the Housing (Scotland) Act 1987. Local authorities are responsible for enforcing these requirements. DETR and Welsh Office have recently published proposals for LA licensing of HMOs¹⁴; these proposals, which would replace existing HMO legislation (for England/Wales), include a new duty of care on landlords for ensuring adequate health and safety standards (i.e. including gas safety). DETR/Welsh Office

¹⁴'Licensing of Houses in Multiple Occupation - England. Consultation Paper', DETR April 1999 (and parallel proposals for Wales, published by the Welsh Office).

propose that this provision should replace the way in which HSWA section 3 is currently applied to landlords in these circumstances. They argue that this will provide a greater incentive for compliance (including that on gas safety) as, unlike HSWA, the new duty of care would imply both civil and criminal liability. It is proposed that licensing of HMOs should be conditional on there being valid gas safety check certificate(s) for the premises concerned. The Scottish Executive is considering recommending a similar condition in its guidance to local authorities on the implementation of mandatory licensing of HMOs. This guidance will be issued before the introduction of licensing which is planned for year 2000.

Views expressed

176. Key stakeholders consulted in the Review expressed broad support for retaining the existing level and prescription of control on landlords in GS(IU)R. It was felt that rented accommodation generally presents a higher gas safety risk in comparison with other sectors, and that there is a continuing need to give a high level of protection, especially for vulnerable groups, e.g. students. As noted in paragraphs 21 and 25-31, this view on risk is generally borne out by the results of the BSG survey, although the local authority rented sector was there concluded to present a similar risk to owner-occupied property, with Housing Association property second in line, and private rented accommodation presenting the highest risk, i.e. with a 'risk factor' (taking into account the percentage of national split of property ownership) of nearly twice that for owner-occupied houses. It was also notable that, despite the controls in place, BSG identified a disproportionate level of incidents in the rented sector resulting from a failure to maintain gas appliances, lending further support to the argument that levels of control should not be reduced.

177. While stressing that cost and administrative burdens should be kept as low as is practicable, those bodies representing landlords who were consulted generally accepted that current requirements served a purpose. However, they drew a contrast between professional/full-time landlords who were felt generally to understand and accept current requirements, and small 'sideline' landlords who might not have the same attitude, awareness and finance. In particular, concern was expressed over landlords entering the market for the first time through 'Buy to Let' schemes, where they manage their own properties, but may not have considered the broader management issues or be aware of the range of legal responsibilities.

178. The following proposals have been made:

(a) more proactive inspection/enforcement should be carried out in respect of gas safety requirements in rented accommodation. Some have argued this to be necessary, especially in the private rented sector (although others feel the emphasis should be more on giving extra guidance - see below). The broad question of enforcement strategy/allocation is discussed in paragraphs 74-83, and as noted there, a suggestion has been made that gas safety enforcement responsibility (either for HMOs or private rented accommodation generally) should be transferred from HSE to local authorities. It is argued that this would provide for a more proactive approach at moderate cost, given that Environmental Health Officers already visit premises, especially HMOs, for the purpose of existing housing legislation (which already covers certain gas safety requirements, as noted earlier);

(b) legal requirements on landlords should be simplified. As noted previously, no specific proposal has been made to reduce the level of detailed prescription in GS(IU)R. However, it has been argued that the existing plethora of laws on landlords, sometimes with overlapping requirements, should be simplified if possible. The DETR/Welsh Office proposals for HMO licensing, which would replace

existing complex HMO legislation, should make a valuable contribution in this respect. The Scottish Executive's plans for licensing will lead to greater consistency in standards across Scotland than at present. HSE have also suggested that, if local authorities took responsibility for enforcing gas safety in HMOs, it might simplify matters if the legal requirements concerned were covered under the same HMO regime, rather than GS(IU)R; however, the implications of such an approach would need careful consideration before a final decision is taken in this respect;

- (c) further action should be taken to target gas safety publicity on landlords. To address the perceived lack of awareness, especially in the small landlord sector, it has been suggested that existing HSE initiatives (e.g. to distribute the leaflet providing guidance to landlords on GS(IU)R 1998 via letting agencies, Energy Saving Centres, student associations and local authority EHOs etc) should be extended to cover groups such as property agents, surveyors and other intermediaries, and that publicity should also be placed in trade publications. This obviously has resource implications, and the general issue of allocation for publicity is discussed in paragraphs 44-47;
- (d) additional guidance should be provided. It is argued that further advice should be given both on the range of legal requirements (including gas) applicable to landlords, as well as technical/practical requirements. In particular, the need for simple and clear guidance (preferably a check list), targeted on the small landlords sector, has been stressed. Although HSE might provide an input (which again raises the question of resource allocation as discussed in paragraphs 45-47), some have argued that the initiative here would best be taken by landlords associations themselves, along the lines of earlier guidance, e.g. produced by individual Letting Agencies;
- (e) remove any liability of landlords in respect of work done by registered, competent gas installers. Concern has been expressed that installers should bear full responsibility for the standard of their work, i.e. that the landlord's duty should be limited simply to ensuring the work is done by a registered installer with the required competence (in accordance with GS(IU)R regulations 3(2) and 4);
- (f) legally provide for access to tenants' accommodation to ensure landlords' maintenance/safety check duties can be carried out. At present, regulation 36(10) of GS(IU)R (together with the exception as to liability in regulation 39) effectively provides a defence for landlords in respect of their maintenance/safety check duties under the Regulations, where access to allow the necessary work to be done is denied by a tenant. However, it has been argued that the current situation is unsatisfactory both from a safety standpoint (i.e. in ultimately allowing appliances/flues to go unchecked/maintained), and in that it does not protect a landlord against separate legal action under HSWA, e.g. where lack of maintenance in these situations results in an incident, for instance in multi-occupancy premises. Although legal recourse to gain access is presently possible in certain circumstances, e.g. under provisions of landlord and tenant legislation and in regard to conditions attached to tenancy agreements, some bodies have argued that more specific provision should be made in law, i.e. by requiring a tenant to allow access for landlords' gas safety duties to be carried out, or granting entry powers to gas installers for this purpose (such as are currently accorded to Transco for emergency purposes under the Gas Safety (Rights of Entry) Regulations 1996);
- (g) replace or supplement the existing general duty (regulation 36(2)) for ensuring gas fittings/flues are maintained in a safe condition, by a specific requirement for equipment to be annually serviced. It is argued that landlords often overlook ongoing maintenance by concentrating on the annual safety check, and that this may result in progressive faults not being detected, and give rise to a dangerous situation. It has been suggested that a more prescriptive approach for annual servicing (in line with the safety check) would help to concentrate the minds of

landlords in this respect. However, others have argued that the existing general approach should be retained, as specific servicing/maintenance requirements will vary according to the equipment concerned, and landlords should be given flexibility to act on manufacturer's instructions in this respect.

Arguments put forward

179. As noted above, the proposals made raise a number of general questions, e.g. concerning enforcement responsibility and allocation of HSE resources (i.e. publicity and enforcement), which are discussed elsewhere in this document. The following additional arguments have been put forward in respect of the proposals in paragraph 178 to limit liability of landlords and require access for landlords' duties to be carried out:

In favour

- W** a specific legal provision to enable access for landlords' duties to be carried out is essential, as the current situation which allows tenants to prevent gas appliances/flues being maintained and checked for safety, can threaten the safety not only of the tenant concerned, but of other innocent people as well, e.g. in multi-occupancy premises;
- W** the existing law is unfair to landlords as it does not provide an adequately defined defence for them against legal action, e.g. under HSWA, where an incident has occurred primarily because a tenant has refused access for maintenance/safety checks to be carried out;
- W** although landlords are rightly responsible for overall fitness of premises, they cannot be expected to have technical knowledge to bear responsibility for gas work done by qualified registered installers;
- W** on the point above, the present legal situation leaves too much discretion to authorities (i.e. on enforcement policy) and the courts. Although an exception as to liability is provided for landlords in GS(IU)R (regulation 39), this ultimately relies on a decision by the courts over whether a landlord has taken 'reasonable steps' to prevent a contravention in particular circumstances. Similarly, in any case under HSWA section 3, a test of 'reasonable practicability' has to be applied. Previous cases have shown that these provisions do not adequately protect the interests of landlords where gas installers fail to carry out work satisfactorily.

Against

- W** a law which obliged tenants to provide access to their accommodation or granted powers of access thereto would constitute a serious threat to civil liberties and would be an obvious means by which unscrupulous landlords could exercise powers over

their tenants. The risk it would pose to vulnerable people simply could not be defended on grounds of gas safety;

- W** although it is understandable for landlords to think as they do in respect of responsibility for the work of gas installers, to place further limits on their overall legal liability might send the wrong signal to unscrupulous landlords, who could attempt to use any relaxation to their own advantage;
- W** in practice, it might be difficult to implement a change in law, as proposed in the above respect, without interfering with the legitimate responsibilities placed on landlords. For instance, while the duty to ensure competence of people doing gas work might, for small landlords not normally extend beyond checking the CORGI identity card, where a large landlord, e.g. local authority, exercises a high level of control over work (such as through extended contract conditions), further action could be required, including supervision/examination of the work done. The discretion currently given to the courts on the extent of landlords' liability is important to allow such flexibility in interpreting requirements in particular circumstances.

Question 40 - What is your view on whether the current duties on landlords in GS(IU)R regulation 36 should (a) be retained without change, or (b) amended in any way, e.g. to increase or relax controls? (If you feel that changes should be made, please give details).

Question 41 - What are your views on the proposals in paragraph 178 above, concerning the need for: (a) more proactive inspection and enforcement of gas safety requirements in rented accommodation; (b) simplification of legal requirements on landlords; (c) further action to target gas safety publicity on landlords; (d) more guidance to be given to landlords; (e) removing liability of landlords in respect of work done by gas installers; (f) a legal provision to ensure access can be gained to tenants' accommodation in order to carry out landlords' maintenance/safety check duties?

Question 42 - What are your views on whether the existing general duty for landlords to ensure gas fittings/flues are maintained in a safe condition (regulation 36(2)) should (a) be replaced or (b) supplemented, by a requirement to ensure that gas equipment is serviced annually?

Gas safety checks in house transactions

Present position

180. For rented accommodation, regulation 36 of GS(IU)R requires a landlord to ensure, before the start of a new lease, that a safety check is carried out on any appliance/flue which has been installed for one year or more prior to the lease commencement date. A copy of the safety check record for gas equipment has to be issued to any new tenant before occupying premises. In contrast, there are no similar requirements for providing an assurance of the safety of gas equipment in ‘owner-occupied’ property, when such property changes hands.

Views expressed

181. Concern has been expressed that gas appliances/flues in ‘owner-occupied’ premises, e.g. private houses, do not have to be checked for safety prior to property transaction (several CO incidents have occurred in such situations, shortly after new occupancy has been taken up). As with annual safety checks and records generally (see earlier), it has been argued that the current situation is anomalous, and that levels of control for private owner-occupied property should be brought more in line with those in the rented sector.

182. The following proposals have been made:

- (a) introduce a legal requirement for a gas safety check to be carried out before property is sold. This would involve either the prospective vendor or someone else involved in the sale, e.g. estate agent, arranging for a safety check on the gas equipment, and for defective equipment to be removed or repaired as necessary, before property changes hands. It has been suggested that such a requirement could be applied through a legal duty in the Regulations, or possibly by administrative or legal controls in the property transaction process (see below);
- (b) require estate agents/solicitors involved in conveyancing to make reasonable checks for proof of safety of gas equipment, e.g. by reference to installation/service records provided by prospective vendors. As noted in paragraph 171, it has been suggested that this might be achieved through a requirement for a seller’s information pack to be provided by anyone marketing property, as included in DETR’s recent proposals for making home buying and selling easier. An alternative approach would be for a new provision to be introduced into GS(IU)R, requiring reasonable checks on proof of safety to be made, e.g. by solicitors/estate agents.

Arguments put forward

- W** the proposal would impose cost burdens on whoever was given the duty to ensure that safety checks are carried out and action is taken to make safe/repair any defective equipment;
- W** without some type of exemption, any legal requirement would be unworkable as the likely demand for safety checks could not be met by the current work force of registered gas operatives. In this regard, it has been suggested that an exemption might be applied (broadly similar to the landlords’ safety check, as discussed earlier), where equipment has been serviced by a registered installer within 12 months prior to the sale of the property; alternatively (or additionally) it has been proposed that safety checks should not be required for property (say) less than 5 years old. With both these

exemptions in place, it has been suggested, subject to the housing market, that up to 2 million safety checks per year would be required, which might be managed by the industry.

Question 43 - What is your view on whether a legal requirement should be introduced to require: (a) gas equipment in 'owner-occupied' properties to be checked for safety; (b) any faulty equipment to be made safe or repaired, before property is sold?

Question 44 - If you feel such a requirement should be introduced:

(i) what is your view about providing an exemption (a) where a check has been made within one year prior to the date of property sale; (b) in the case of property less than 5 years old?

(ii) do you believe that responsibility for ensuring a safety check is carried out and action is taken to make safe or repair equipment, as necessary, should be placed on (a) the property vendor, (b) the estate agent, or (c) someone else (please specify)?

Question 45 - What is your view on whether solicitors involved in house transactions should be required to make reasonable enquiries to obtain proof of safety of gas equipment in property to be sold?

PART 8 - OTHER ISSUES

Carbon monoxide alarms

Present position

183. HSE currently recommend the use of CO alarms meeting BS 7860 (domestic CO detectors) as a 'second line of defence'. However, they are not required under the current Regulations, or referred to in the associated ACoP. It is emphasised by HSE that alarms must not be seen as a substitute for proper installation, maintenance and safety checks on gas appliances and flues.

Views expressed

184. Some of the key stakeholders consulted have argued that increased recognition should be given to the positive role alarms can play in reducing gas accidents, and that they should be legally required in certain situations. Various suggestions have been made on how a requirement for alarms should be targeted, including: (a) all domestic premises, (b) all rented accommodation, (c) houses in multiple occupation (HMOs), or (d) vulnerable groups, e.g. elderly, disabled and chronically sick. Options put forward on how such a legal requirement might be applied range from placing a specific duty to fit the equipment on the gas consumer, e.g. in GS(IU)R, or for new buildings, on the builder (i.e. under Building Regulations), to a duty on the gas supplier, applied by the OFGEM licence, to make supply conditional on the fitting of CO alarms (similar to the approach suggested for annual servicing of gas appliances, see paragraphs 164 and 167).

185. It has also been suggested that (either in addition to or instead of legal control) further steps should be taken to encourage the fitting of alarms, e.g. by recommending their use in HSE guidance and through further industry promotions, such as deals on alarms associated with the purchase of gas appliances or service contracts.

Supporting arguments

186. The following arguments have been put forward in support of introducing a legal requirement to fit CO detection equipment:

- W** because CO is invisible and has no taste or smell, a detector is the only reliable way of warning the consumer against this danger before it is too late;
- W** it is fully appreciated that CO alarms are not a substitute for proper installation, maintenance and safety checks on gas appliances. However, the continuing number of gas-related CO incidents shows that existing controls which rely on these primary safeguards are not enough, i.e. backup protection afforded by alarms is required;
- W** while the need for proper installation and maintenance standards cannot be overemphasised, it is important to recognise that conditions can change from day to

day, e.g. a safety check will only be valid at the time it is carried out and cannot pick up subsequent, unanticipated, changes such as wind effects on a flue or blockage of a flue or air vent. CO alarms offer a way to warn gas consumers if such unanticipated events happen;

- W** the cost of alarms has dropped markedly in recent years and although it remains relatively high (typically £35 each), further reductions would be likely with increased demand, e.g. if a legal requirement was introduced. The situation might be compared to smoke alarms where typical cost has dropped from £20 (initially) to about £3 now.

Opposing arguments

187. The following arguments have been put forward against imposing a legal requirement to fit CO alarms:

- W** although there is no room for complacency, the overall risk from use of gas is small in comparison with other activities in the home, e.g. DIY generally. This level of risk does not warrant the introduction of draconian measures to require the public to fit CO alarms in their own homes;
- W** imposition of such a legal requirement would be an unacceptable infringement of civil liberties. Against this, others have argued that this is not just a question of an individual being free to decide on their own risk exposure; other occupants of a building, e.g. flat, can (and have, very occasionally) been killed or injured as a result of CO migration (see similar issues discussed in relation to annual servicing of gas appliances in paragraphs 163-167);
- W** there are continuing technical reservations over alarms, e.g. on sensitivity, reliability and long term stability. In response, the equipment manufacturers acknowledge that sensitivity is a key issue; they are concerned for CO detectors/alarms to give the earliest warning of CO as is practicable, consistent with the need to avoid false alarms. However, they believe such concerns will to some extent be covered by the forthcoming EU standard on alarms (alarms meeting the current BS already comply in this respect). They also believe that questions of reliability and stability are largely covered by the established standards, and that satisfactory performance will be maintained if the equipment is properly serviced in accordance with manufacturer's instructions. However, others have argued that further work is required to resolve certain issues, e.g. on long term stability and optimum siting of alarms;
- W** although the cost of equipment has been reduced, a legal requirement for alarms would still impose a significant burden on the public, and this would be unacceptable, particularly for people on low income. To address these concerns, various means have been suggested to relieve the cost burden, e.g. extending existing industry promotions (as in paragraph 185) and providing alarms through gas care registration schemes (currently operated by gas suppliers to provide free inspection of gas equipment for vulnerable groups - see paragraph 38). Others have argued that the cost of alarms generally should be borne by the gas supplier under a 'duty of care';

W in view of the large number of people involved, even on the most narrowly targeted proposal, it would be difficult to enforce any requirement placed on the gas consumer to fit CO detection equipment. In response, others have argued that the proposal to apply control through gas supplier licence conditions would not be subject to such problems (although separate difficulties would need to be resolved, e.g. for LPG - see paragraph 164). It has also been suggested that a further option for HMOs might be to apply a requirement to fit alarms through the HMO licensing scheme currently being proposed by DETR (see paragraph 79).

Way ahead

188. HSE has commissioned independent research to help resolve outstanding technical issues on CO alarms. The question of whether a legal requirement for alarms might be applied through gas supplier licence conditions, and on pricing policy (e.g. whether any burden placed on the gas supplier should be passed on to gas consumers in an increased price of gas) would be for DTI/OFGEM, rather than HSE, to decide. The future approach on alarms will therefore depend on the outcome of the research in hand and possibly require further consultation with DTI/OFGEM. However, views are now requested on the issues of principle, as below.

Question 46 - Do you consider that fitting of carbon monoxide alarms should (a) be required by law in certain premises, (b) recommended as good practice in certain premises, or (c) neither required by law nor recommended as good practice?

Question 47 - If you believe that carbon monoxide alarms should be legally required, do you feel this should apply to (a) all domestic premises, or (b) all rented accommodation, or (c) houses in multiple occupation, or (d) the homes of elderly, chronically sick or disabled persons, or (e) other places (please specify)?

Question 48 - If you feel that a requirement for alarms should be introduced, do you believe, in principle, that this should be done by placing (a) a specific legal duty on gas consumers, e.g. in GS(IU)R, or (b) a control on gas suppliers which makes the supply of gas conditional on the fitting of alarms?

Question 49 - What are your views on whether the gas supplier should be responsible for providing CO alarms: (a) in all cases where fitting of alarms was required by law; (b) in the case of people on low income?

Flue gas analysers

Present position

189. The Regulations require certain checks to be carried out immediately after installation or other work on a gas appliance; these include establishing the effectiveness of any flue, adequacy of combustion air and safe functioning of the appliance (regulation 26(9)). These parameters are also called up in the landlord's gas safety check (regulation 36). However, the Regulations do not specify the particular test methods to be used, and although the associated ACoP gives some guidance in this respect, it does not refer to flue gas analysis (FGA).

Views expressed

190. It has been proposed that gas installers and service engineers of Emergency Service Providers (ESP) (i.e. Transco service engineers at present) should legally be required to be equipped with flue gas analysers, with consumers being able to identify installers who can carry out FGA, e.g. through the national database of registered installers (see paragraph 159(h) concerning issues related to the database). It is argued that this proposal would make an important contribution towards improving gas safety, as in addition to FGA, analysers might be able to be used to monitor CO levels in a room. While recognising that environmental issues are outside the direct remit of this Review, proponents of FGA also point to the value of this technique in promoting increased fuel efficiency.

Supporting arguments

191. The main arguments put forward in support are:

- w** FGA is the only reliable way to establish whether safe combustion is taking place and for giving customers a proper (quantified) performance record. Standard flue tests, i.e. smoke/flue flow, are both qualitative and subjective, and depend on conditions, e.g. wind, at the time of the test. Therefore, these can only give limited assurance of safety;
- w** without FGA, there is no reliable way of knowing why a CO detector has alarmed, i.e. whether there is a genuine CO emission or a false alarm;
- w** without analysers, ESP service engineers and gas installers are inhibited in the service they can give to customers. For instance, they cannot easily pinpoint faulty equipment, which for ESPs has encouraged the approach of simply cutting off the gas supply in event of a reported emergency, thereby possibly inconveniencing gas consumers without good reason (see paragraphs 55-58). More seriously, the inability to specifically identify the source of CO in a particular situation can lead to a mistaken diagnosis, with faulty equipment being left in operation, and a continuing risk of CO poisoning;
- w** equipping operatives with analysers might contribute to their own safety, e.g. by allowing them to measure CO levels, before entering a poorly ventilated area where an appliance is malfunctioning or after a CO incident ;

- w** FGA is a well established and demonstrably reliable technique; there is an long-standing British Standard for analysers. FGA has been used by British Gas over the last 10 years as a diagnostic tool in servicing of gas appliances, to determine whether or not equipment needs to be dismantled/cleaned. This has avoided unnecessary work (by the 'if its not broke don't fix it' principle) that itself had previously resulted in faults and many call backs. The technique has therefore also been very cost-effective;
- w** including FGA in the landlords' safety check would provide a valuable indication of whether gas equipment was being properly maintained. Gradual deterioration which might lead to a hazardous situation at a later stage is not always shown up in tests/examinations currently required under the safety check. Against the latter point, it has been noted that the current Regulations only prescribe minimum requirements for the safety check, and do not preclude the need for further tests/examinations as required to fully assess safety in particular circumstances;
- w** there is a precedent in that quantified assessment of flue performance is currently required in Germany.

Opposing arguments

192. Others have argued that the safety case to justify a legal requirement for flue gas analysers (and the associated costs this would impose, e.g. on the industry) has not yet been established. The following points have been put forward in this respect:

- w** although the use of FGA in service regimes may have had some 'spin-off' for safety, i.e. by targeting action and encouraging people to have appliances serviced because of reduced costs, this benefit has not been clearly demonstrated. The main imperative for introduction of FGA here was to provide a less costly regime for the industry, while maintaining earlier safety standards;
- w** FGA can have limited relevance because flue gas composition is not always critical to safety. Where a flue is operating satisfactorily, combustion products will be discharged safely to the open air;
- w** FGA has similar limitations to other tests, i.e. it only reflects conditions at the time. For instance, the effects of vitiation (one common cause of CO incidents), arising from inadequate room ventilation, e.g. blockage of an air vent, will not always be picked up;
- w** considerable caution is necessary in the use of analysers and interpretation of results, especially for CO levels in the air. In the wrong hands, major problems (e.g. unjustified safety concerns and expense) could result. The equipment manufacturers argue that this concern should, at least partly, be addressed by a proposed BS Code of Practice on the use of analysers, which is supported by CORGI and gas appliance manufacturers;

w a legal requirement would impose significant extra cost on the industry, both for equipment and time taken to carry out the extra tests; some of these costs would inevitably be passed on to the customer. In this regard, although the price of analysers has decreased in recent years, it remains fairly high (£500 for the cheapest model plus annual servicing costs of about £50-100). Manufacturers point out that increased demand (e.g. if a legal requirement was introduced) would lead to price reductions. However, it is separately argued that the likely cost would still represent a significant outlay for a small gas installer business.

Way ahead

193. Faced with these competing arguments, HSE has commissioned independent research to help assess the contribution FGA can make to gas safety. In deciding the future approach, this safety benefit will need to be balanced against the cost/practicability considerations, e.g. for gas installers. The question of use of analysers by ESPs is also a matter for DTI/OFGEM to consider in view of the possible implications for licence conditions and pricing policy, e.g. on whether cost might be passed on to consumers through increased price of gas. The general issue of emergency response measures is discussed in paragraphs 55-58 of this report. Certain questions on the role of emergency service providers, e.g. concerning remedial action after a gas supply emergency, are being addressed in the current review of the Gas Safety (Management) Regulations. (1)

194. While the future approach will need to take account of the research in hand, views are invited on the options currently put forward, as below.

Question 50 - Do you consider that (a) Emergency Service Providers and/or (b) gas installers generally, should be equipped with flue gas analysers?

Question 51 - If you believe they should be so equipped, do you consider that a legal requirement should be imposed, or that the use of flue gas analysers should simply be recommended as good practice?

PART 9 - GAS SAFETY (INSTALLATION AND USE) REGULATIONS (GS(IU)R)

SCOPE

Present position

195. Application of the Regulations is mainly determined by:

- W** the definitions of key terms in GS(IU)R, such as ‘gas’, ‘gas appliance’ (which, for example, excludes mobile appliances from most of the Regulations), ‘gas fittings’ (which broadly excludes gas fired plant used for industrial purposes) and ‘work in relation to a gas fitting’ (which, for instance governs application of CORGI-registration and the related requirement for demonstrating competence, e.g. by ACS), and
- W** specified exceptions for particular types of premises and operations.

Please see the summary of the Regulations in Annex 1 for further details.

196. With regard to premises (very broadly defined in section 55 of the Health and Safety at Work etc. Act 1974 as including any place within GB, Part I also applies to Northern Ireland and is extended to certain offshore areas by Order in Council), exceptions are provided both for ‘industrial’ workplaces and some other premises, eg certain vehicles, caravans and boats. Most of the requirements of GS(IU)R (except for provisions on antiluctuators/valves and gas escapes) do not apply to mines, quarries, factories (including certain other premises to which the Factories Act 1961 was applied, such as electrical substations), agricultural premises, temporary installations at construction sites, premises used for testing of gas fittings and sewage treatment works; with the proviso that any domestic or sleeping accommodation at these places is fully covered.

197. The exceptions for ‘industrial’ premises have been progressively introduced, based on practical experience in the operation of the Regulations, separate developments in workplace health and safety legislation and responses to earlier consultation exercises on proposed changes in gas safety legislation. The purpose and effect of these restrictions has been progressively to focus controls mainly (but not exclusively) on the protection of the public in their homes (rented or otherwise), and in other premises they occupy, e.g. for shopping, educational or leisure purposes. The underlying rationale has been to distinguish between these types of premises and others used for ‘industrial’ purposes where different health and safety regimes, controls and expertise apply, affording similar gas safety protection. However, despite these refinements in scope, perceived anomalies and practical difficulties remain, which have been highlighted in several proposals (often with linked objectives) put forward in the bilateral meetings with key stakeholders; these are discussed below.

Gas work in non-domestic/residential premises

View expressed

198. As noted above, certain ‘non-domestic’ premises and ‘industrial plant’ are excluded from the Regulations. However, some of these premises (and the gas-fired plant within them) remain in scope, including offices, shops and banks, as well as hospitals, educational premises, hotels and certain other residential accommodation such as holiday homes, and other public buildings. Several industry bodies have referred to practical difficulties arising from the application of GS(IU)R in this sector, and especially the burden and relevance of the prescriptive registration regime (including related means for demonstrating competence). They point to parallels with the ‘industrial’ sector (often the same companies are involved) and argue that most non-domestic gas work (apart from any in residential accommodation) should similarly be excluded from the GS(IU)R regime, which they suggest is primarily directed towards the very different working practice in the domestic sector - for convenience the premises concerned in this proposal are collectively referred to below as ‘the commercial sector’. (See also discussion of this issue in relation to the certification of individual operatives in Section 5).

199. Two proposals have been put forward:

- (a) extend the existing exceptions for ‘industrial’ premises, which disapply most of the Regulations, to the ‘commercial’ sector; or
- (b) retain ‘commercial’ gas work within scope but remove the need for registration and for related competence in such work to be assessed under ACS.

Supporting arguments

200. The main points offered in support of these proposals are:

- W** as with industrial work (currently excluded), the rigid and prescriptive requirements of GS(IU)R are not geared to the needs and working practices of the commercial sector, which results in unnecessary burdens being imposed on industry by a system (especially ACS) which anyway does not meet the required safety needs, e.g. for large specialised plant (see below);
- W** with regard to burdens, the registration regime (including ACS) in particular does not square with the contractual working practice widespread throughout the industrial and commercial sectors. Here it is argued that more recognition needs to be given to limited competence requirements for specific tasks, e.g. hanging of appliances (‘carcassing’ work); in these cases, skill competencies such as NVQs are suggested as more than adequate without the need for full ACS assessment (see discussion of training and competence certification in Part 6). A sharp contrast is drawn with the domestic sector, where the same person often carries out the full range of gas work and where full GS(IU)R prescription is argued as remaining appropriate;
- W** on safety, the ACS, for example, does not properly address requirements for specialised (often ‘industrial’ scale) gas equipment frequently encountered in commercial gas work;

- W** there is a demonstrably lower gas safety risk in the ‘non-residential ’ (i.e. including commercial) sector as a whole compared to the domestic/residential sector; this is argued to justify a distinction in controls between these sectors, as is proposed. In this respect, the fatal accident record (typically 30 CO poisonings per year) for the domestic/residential sector is contrasted with ‘commercial/industrial’ premises, where comparatively few gas-related incidents have occurred in recent years (although there have been some serious gas-related fires and explosions). A contributory factor is suggested to be that in ‘non-domestic/residential’ premises, gas appliances are much more often installed in locations separated from occupied areas, thereby reducing the potential for CO poisoning;
- W** as with the ‘industrial sector’, there are established systems in place for safe management of gas (and other) work throughout the commercial sector; again, a contrast is drawn with small businesses in the domestic sector, where such robust arrangements are argued less likely to exist. Removal of GS(IU)R prescription is therefore seen not to represent any reduction in safety standards. Separate legislation, e.g. (HSWA, MHSWR¹⁵, and CDM¹⁶) (which, although addressing risks associated with construction operations rather than the final safety of the building (and associated services) when taken into use, nevertheless imposes a safety management discipline which has an indirect ‘knock-on’ effect, in this respect), as well as controls under Building Regulations (which address installation of heat producing appliances), is argued as more than adequate for controlling gas safety in the commercial sector, as currently is the case for ‘industrial’ work. Some have suggested that a risk assessment-based ‘safety plan’ approach might be developed for certain large scale gas work (see paragraph 232(b));
- W** to reinforce existing management systems, formal procedures would be introduced for inspection and checking of work (i.e. before gas is turned on) by an ‘appointed person’, who is in overall charge and holds the required specialist expertise (which is argued not to be the case with CORGI inspectors at present). Similarly, the industry suggest that a new management audit regime could be introduced, which would be administered by a separate industry body experienced in commercial gas work, to fill any gap left by removal of CORGI inspection.

Opposing arguments

201. Opposing arguments have been put forward, as follows:

- W** the Regulations should not distinguish between domestic and non-domestic premises, i.e. the same levels of protection on gas safety should be applied to both sectors (see also paragraphs 225-227);
- W** the proposed exceptions would lead to a reduction in safety standards. In particular, it has been suggested that the management systems in place might not be sufficiently robust to maintain levels of safety, without the supportive prescription of GS(IU)R. Although tightening of industry check/audit procedures is proposed, these might not have the independence and ‘teeth’ of existing CORGI arrangements;

¹⁵Management of Health and Safety at Work Regulations

¹⁶Construction (Design and Management) Regulations

- W the industries' concerns could (at least partly) be addressed by providing greater flexibility in ACS, without having to relax regulatory requirements further (see paragraph 131).

Question 52 - What are your views on either excluding (a) all gas work in the 'commercial' sector from the Regulations, or (b) gas work in the 'commercial' sector from the need for registration (and related competence assessment under ACS)?

Installation work not involving 'live gas'

Current position

202. The current Regulations, including requirements for competence and registration, make no distinction between work, e.g. installation of pipework in new buildings, carried out before commissioning and that done afterwards, i.e. where 'live gas' is involved.

Views expressed

203. It has been proposed that certain 'new build' work, namely (a) the hanging of appliances ('carcassing') and (b) the installation, including jointing (e.g. welding and brazing) and placing in position of installation pipework, should be excluded from the requirements for CORGI registration (and associated competence assessment requirements under ACS), where this work does not involve connection to the gas supply, i.e. prior to the commissioning stage. As with the proposals for 'commercial' gas work generally, this proposal (which extends to work during construction of both domestic and commercial buildings) relates to industry concerns over the burdens and relevance of these prescriptive provisions for operatives carrying out this work.

204. A similar proposal was put forward in the GS(IU)R 1998 revision; but was subsequently restricted to 'non-domestic' premises, in response to arguments put forward in consultation over the broadly different working practice in the domestic sector. The amended proposal was finally not pursued because HSC considered that the safety implications needed further consideration which was more appropriate to the Fundamental Review.

Supporting arguments

205. Similar arguments have been deployed as in paragraph 200 over the appropriateness of registration and the related ACS regime, and about the maintenance of safety standards by other means, i.e. through the general 'goal-setting' controls of HSWA and associated Regulations, e.g. on safety management. Additionally it is argued that:

- W** relaxations are justified specifically for these operations as they are intrinsically ‘low risk’, i.e. because they do not involve work with ‘live gas’;
- W** final commissioning checks by a CORGI registered installer would still be required under the Regulations, before turning on the gas supply, thus maintaining an overall assurance of safety.

Opposing arguments

206. Opposing arguments similar to those in paragraph 201 have been put forward; in addition the following points specific to this proposal have been made:

- W** claims about safety management standards of large companies in the ‘commercial’ sector (even if justified) cannot be applied to small businesses carrying out domestic gas work (also covered by the proposal). The fact that industry have elsewhere argued for a sharp distinction in controls between the two sectors (i.e. on the basis of broad differences in working practices) might suggest a flawed logic;
- W** where work is left inaccessible for subsequent inspection by the commissioning (i.e. registered) installer, e.g. pipework buried in the structure of a building, it would not be possible to give a proper assurance of safety before turning on the gas supply. Against this it has been suggested that controls under the Pressure Systems and Transportable Gas Containers Regulations (which address engineering integrity requirements for certain pipework operating at a pressure exceeding 2 bar above atmospheric) might give the necessary assurance for some (albeit a very limited range) of ‘buried’ pipework in large ‘commercial’ systems;
- W** it would be unfair to place liability on a commissioning installer with regard to the safety of work over which they have been unable to exercise control or inspect. Against this it has been argued that in practice such factors would be taken into account by the enforcing authorities and courts if subsequent problems arose;
- W** the special considerations relating to commercial pipework installation have already been addressed by a limited competence module in ACS. This administrative change should have met much of industry’s concern, e.g. over burdens, without having to resort to legal exemption, as is proposed.

Question 53 - Your views are requested on whether:

- (a) the hanging of appliances (i.e. ‘carcassing’) or installation of pipework or both of these types of work should be excluded from the requirement for registration (and the related competence assessment), where confined to the pre-commissioning stage, i.e. not involving ‘live gas’;**
- (b) any such relaxation should apply only to ‘non-domestic’ premises, or should also extend to domestic situations;**
- (c) any exception should be restricted to where all gas appliances, fittings and pipework are readily accessible for subsequent inspection by the commissioning (registered) installer, or should extend also to other situations where work is within the scope of the Pressure Systems and Transportable Gas Containers Regulations.**

Work on ‘industrial’ scale purpose designed plant in commercial premises

Current position

207. As discussed earlier, CORGI registration, and the related competence assessment, applies to all premises within the scope of the GS(IU)R. The only ways in which broad application of the Regulations is influenced by the type of gas appliance concerned are:

- (a) mobile appliances are generally excluded (but the definition of ‘gas appliance’ still applies competence/registration, employers’/self-employed persons’ maintenance, and landlords’ duties), and
- (b) gas equipment used for the purpose of an industrial process carried out on industrial premises is excluded. The main practical effect of this exclusion (in the definition of ‘gas fitting’) is to extend the exceptions separately provided for ‘industrial’ premises, to the installation of industrial process equipment during construction of industrial buildings.

208. Apart from these specific exclusions, the Regulations generally take no account of the types of appliance involved, which can range from domestic appliances through commercial catering and heating equipment to industrial scale purpose designed plant in commercial premises.

Views expressed

209. Several bodies have pointed to practical difficulties in application of the ACS competence assessment regime in respect of large or specialised equipment used in the commercial sector. They argue that the ‘standardised’ prescription of ACS, while suitable for ‘domestic’ type equipment, is simply not geared to special needs of the commercial equipment sector where large ‘industrial’ type plant is frequently encountered. They point out that this equipment is generally not ‘generic’, i.e. it is often purpose-designed and factory prefabricated. For this reason, it is argued that only the plant

manufacturer is generally able to provide the necessary training and assessment of competence for installers of such plant (in practice, installation/ commissioning is normally carried out by the equipment manufacturer or someone they have trained). The current ACS regime is seen as both irrelevant and inadequate for addressing safety requirements in these circumstances.

210. Two alternative proposals have been put forward to address these concerns:

- (i) provide an exclusion from both registration and related competence requirements under GS(IU)R (i.e. ACS) for work on combustion equipment and associated controls, where this is carried out by the equipment manufacturer or engineers trained by the equipment manufacturer (i.e. including those not employed by the manufacturer), or
- (ii) disapply the competence assessment requirement as above, but retain registration. Establish a special class of registration for this specialised sector of work which recognises the alternative route to competence proposed.

Supporting arguments

211. The following points have been made in support of these proposals:

- W** the current ACS scheme is inadequate for assessing competence in respect of large/specialised plant in the commercial sector. Therefore, registered operatives with a non domestic qualification under ACS are unlikely to be competent to work on this plant without further training or demonstration of competence. A false sense of security and potentially dangerous situations can currently arise where installers are unaware of this fact;
- W** as adequate training/assessment can only be given by the equipment manufacturer, ACS is both an irrelevant imposition and an unnecessary burden on industry in these situations;
- W** extension of current ACS to cover the specialised plant concerned would be impracticable and uneconomic when the range of equipment and development of technology is taken into account;
- W** it is unrealistic to expect CORGI to equip their inspectors with the necessary specialist expertise, and to give adequate technical support to installers for type of equipment concerned, or to judge the competence of engineers trained by equipment manufacturers;
- W** removal of the registration/ACS competence assessment requirements would not represent any reduction in safety standards either from a legal or practical standpoint. Installers would still be need to be competent under the 'goal-setting' requirements of HSWA and related Regulations, eg MHSWR; industry guidance/standards would be developed to define practical requirements.

Opposing arguments

212. While acknowledging problems in applying the ACS regime to large commercial plant, some have suggested that the appropriate way to address these would be in an Approved Code of Practice on competence, i.e. which specifically recognises the proposed alternative route to competence in these circumstances, rather than by means of further legal exclusions from GS(IU)R. They argue that the latter would be undesirable as a matter of principle and might not provide the right answer anyway unless the problem is properly addressed in an ACoP (the present ACoP on standards of training already extends beyond GS(IU)R to cover requirements under HSWA). In this regard, it has been suggested that either a self-contained ACoP on 'industrial equipment' could be developed or alternatively the subject could be covered as part of a revised ACoP on training/competence generally, to replace the 1988 version (see also paragraphs 146-147). However, others have argued for the importance of specific legal exclusion from registration/competence requirements under GS(IU)R, to provide the necessary reassurance against future misinterpretation.

Question 54 - What are your views on whether work on 'industrial' scale purpose designed plant in commercial premises should be excluded from (a) the ACS competence assessment and (b) the requirement for registration under GS(IU)R, where the work is done by the equipment manufacturer, or a person trained by them to do this work?

Question 55 - If you believe that a relaxation should only be provided in respect of the ACS competence assessment requirements in these circumstances, what are your views on whether this should be achieved by:

(a) a legal exclusion clause in GS(IU)R, relying on industrial standards/practice alone for defining training/competence requirements, i.e. with no ACoP;

(b) a provision in an ACoP within new Regulations to allow competence under GS(IU)R to be demonstrated in the way proposed, i.e. through training/assessment by the equipment manufacturer; or

(c) a legal exclusion clause in new Regulations, with a new ACoP on standards of training/competence in work on industrial plant (i.e. dealing with general HSWA duties)?

Question 56 - If you agree that an ACoP is required, do you feel that this should be: (a) a 'stand-alone' document specifically on 'industrial' equipment, or (b) part of a revised ACoP on standards of training/competence for both domestic and industrial gas installations, to replace the present (1988) ACoP?

Present position

213. As discussed in paragraphs 202-206, installation of gas fittings in buildings under construction is covered by the Regulations, e.g. competence and registration requirements apply to the installation of new pipework and appliances, even where this does not involve 'live gas work'. The way in which the Regulations are applied to such 'construction work' means that no account is taken of the future use of a building; consequently requirements apply in the construction phase of buildings which, when taken into use, will fall outside the current Regulations. For instance, installation of gas fittings in a factory under construction (except those which are part of industrial process plant) is covered, whereas after the premises are registered under the Factories Act 1961, gas work falls outside GS(IU)R.

Views expressed

214. Several bodies have pointed to practical difficulties arising from the current approach (which they consider anomalous) and argue that the existing 'industrial' premise exceptions should be extended also to cover the constructional phase of these buildings. Some have argued that requirements for competence and training in these circumstances could still be covered by a new ACoP dealing with general HSWA duties in this respect. (See also Section 6, paragraphs 136-137 concerning application of ACS to large scale gas plant).

Supporting arguments

- W** it is illogical to apply the Regulations during construction, e.g. of factories, when identical gas work is excluded at a later stage, such as during building extension;
- W** application of GS(IU)R, especially registration and related competence assessment requirements, in the construction phase of 'industrial buildings' places unnecessary burdens on industry (e.g. by not recognising contractual working arrangements) and does not meet safety needs (especially for specialised large scale plant). These arguments are similar to those for 'non domestic' gas work and industrial scale plant (see paragraphs 198-201 and 207-212);
- W** as with 'industrial' gas work currently excluded from GS(IU)R, safety standards in the construction phase would be maintained through other legal controls, e.g. HSWA, MHSWR, CDM and Building Regulations, i.e. without the GS(IU)R prescriptive controls (see paragraph 200).

Opposing arguments

215. The following arguments have been put forward for maintaining the status quo:

- W** it is important to retain the current approach in order to secure common standards of gas safety at the key stage of construction, across the building industry generally.

This objective is concerned with getting the initial gas installation correct which does not depend on the use to which a building is eventually put;

- W** the proposal could lead to a reduction in safety standards if safety management systems are not sufficiently robust to withstand removal of GS(IU)R prescriptive support.

Question 57 - What are your views on whether gas work carried out during the construction of buildings intended to be used for 'industrial' purposes, e.g. factories, should be excluded from the Regulations?

Question 58 - If you believe that this work should be excluded from GS(IU)R, do you feel that associated competence/training requirements should be covered by a new ACoP dealing with general HSWA duties in this respect?

Application to LPG installations

Present position

216. The current Regulations extend to all parts of an LPG gas installation; this includes the 'supply system', i.e. the storage vessel, service pipework and associated valves/regulators upstream of the emergency control, as well as the 'user end' (installation pipework, appliances etc). In contrast, for mains (natural) gas systems, scope is mainly restricted to the 'user end', i.e. downstream of first emergency control on premises (which marks the end of the service pipe). These differences have important practical implications, e.g. both work on a gas storage vessel and service pipework is subject to competence requirements under GS(IU)R, and service pipework may only be installed by a registered installer (gas storage vessels are excluded from the definition of 'gas fitting', and therefore are not subject to that restriction). Neither the competence nor registration requirements apply in respect of natural gas service pipes. There are also specific requirements in GS(IU)R, e.g. concerning safe location of gas (including LPG) storage vessels.

Views expressed

217. It has been argued that the present legal situation is anomalous and results in unnecessary burdens being placed on the LPG industry, e.g. for meeting registration and associated ACS competence requirements. On this basis, it has been proposed that the 'supply system' of LPG installations, and especially service pipework, should be excluded from the Regulations.

Supporting arguments

218. The following points have been put forward in support of this proposal:

- W** it is illogical to apply the detailed prescriptive requirements of GS(IU)R to service pipework, when service pipes (which perform an analogous function for natural gas) are excluded. This illogicality is heightened by current proposals to facilitate competition in the ‘self-lay’ of service pipes;
- W** as with mains gas, GS(IU)R should target controls for LPG on the ‘customer’, i.e. ‘use’ end (where most of the relatively few accidents occur), rather than the ‘supply’ part of an installation, where recognised industrial standards/safety regimes apply (see below);
- W** the prescriptive requirements of GS(IU)R, and especially the registration (and associated ACS) regime are both inappropriate and unnecessary in respect of work on the ‘supply system’ of LPG installations. In practice, safe installation and maintenance of storage vessels/service pipework (which are normally owned/maintained by LPG companies rather than consumers) is achieved through established industry procedures, backed up by recognised codes/standards. CORGI have yet to demonstrate their expertise in this field;
- W** exclusion from GS(IU)R would not result in any reduction in safety standards because (as with other ‘industrial’ gas work currently excluded from GS(IU)R) control would be maintained through other legislation, e.g. HSWA and MHSWR (see paragraph 200).

Opposing arguments

219. Opposing arguments have been put forward as follows:

- W** it is not entirely valid to draw a direct parallel with controls on service pipes as they are covered by separate provisions for design, construction and maintenance in the Pipelines Safety Regulations (PSR), which have only limited application to LPG service pipework (PSR for instance excludes pipelines contained within a caravan site, where LPG is generally used as a fuel). However, against this it is argued, as above, that the general provisions of HSWA and related ‘goal setting’ Regulations, backed up by established industry standards, are more than adequate to deal with these matters;
- W** removal of registration (including associated CORGI audit/inspection) could lead to a reduction in safety standards if the industry safety management systems are not sufficiently robust. Against this it is argued (as with ‘non-domestic’ work earlier) that current inspection arrangements contribute little towards safety in this sector;
- W** the industry's concerns could (at least partly) be addressed by providing greater flexibility in ACS, without having to relax regulatory requirements further (see paragraphs 133-134).

Question 59 - What are your views on whether:

(a) work on any part of the 'supply system' of an LPG installation (i.e. storage vessel, service pipework and valves, regulators and other fittings upstream and including the first emergency control on the premises) should be excluded from the Regulations, or

(b) work only on LPG service pipework should be excluded from either the Regulations as a whole, or from the specific requirement for registration (and the related ACS competence assessment regime)?

(c) safe location of LPG storage vessels (including cylinders) should be removed from GS(IU)R, leaving controls to other more general HSWA legislation?

Boats and caravans

Present position

220. The Regulations currently exclude certain self-propelled vehicles, inland waterway boats and caravans (see Annex 1, paragraph 3); these exceptions were provided in 1994, i.e. when requirements were first extended to LPG (the main fuel gas used in caravans and boats). In effect, application of GS(IU)R is mainly restricted to 'hire' situations (e.g. for holiday accommodation) or where the public have access in the course of a business (e.g. a mobile food stall or floating restaurant). However, caravans (other than touring) are covered generally, and in the 1998 revision of GS(IU)R, the scope on inland waterway boats was broadly aligned with caravans, by an extension to cover boats used primarily for domestic or residential purposes (including owner-occupied houseboats). At present, the principal exclusions are, therefore privately owned/used inland waterway boats and touring caravans which are used primarily for sporting or leisure purposes.

Views expressed

221. There was broad support, in principle, for removing current exclusions, i.e. to extend the Regulations to all boats and caravans. However, opposition to such a change was expressed, e.g. by organisations representing the boat and caravan industry, and by inland waterway navigation authorities who run boat safety schemes which underpin the licensing of boats to use their waterways. These authorities have argued for greater recognition of their schemes (which include gas safety requirements), e.g. by providing exemptions in GS(IU)R where such schemes apply.

Supporting arguments

222. The following points have been made in support of extending the scope of GS(IU)R to cover all caravans and inland waterway boats:

- W** the current exceptions are illogical as use of LPG in all inland waterway boats and caravans gives rise to a similar risk; the particular use or occupancy of a boat or caravan makes no significant difference in this respect;

- W** the current exceptions are insupportable from a safety standpoint, in view of the considerable potential risk from the use of LPG in the confined spaces such as caravans and inland waterway boats as a whole. Similar regulatory protection should be given to these as is currently applied to occupants of other premises within GS(IU)R, where the gas safety risk might not always be as high as boats and caravans.

Opposing arguments

223. The following arguments have been put forward against extending the scope to cover all caravans and inland waterway boats:

- W** extending the scope, e.g. to apply GS(IU)R competence requirements to gas operatives involved in the initial installation and subsequent servicing of gas equipment in all caravans and inland waterway boats, would impose major additional burdens on the industry and these would inevitably have to be passed on in increased costs to boat/caravan owners. Requirements would be extended to a very large number of caravans and boats under these proposals (e.g. 625, 000 touring/motor caravans are currently outside scope), and a major cost burden overall would therefore be involved;
- W** the burden imposed by extending scope would be difficult to justify, in view of the relatively good record on gas safety in caravans and boats (there have been few fatalities resulting from the use of gas appliances in caravans or inland waterway boats in recent years);
- W** it is inappropriate to apply GS(IU)R to boats which might also be subject to maritime safety legislation;
- W** application of GS(IU)R is unnecessary where a boat safety scheme is operated by the navigation authority concerned. As such schemes include comprehensive gas safety requirements, all boats covered by them should be excluded from GS(IU)R. Against this it has been argued that, in practice, requirements are not always equivalent, e.g. for rented accommodation GS(IU)R requires an annual safety check whereas a typical boat safety scheme might operate examinations on a quadrennial basis; furthermore schemes are not in operation on all inland waterways. For this reason it has been argued that although the schemes can make a useful additional contribution to gas safety, the overall risks from use of LPG on board boats demand that the GS(IU)R legal regime should applied equally, across the board.

Question 60 - What are your views on extending the current scope of GS(IU)R to cover all caravans and inland waterway boats?

Question 61 - What are your views on excluding wholly or partly from GS(IU)R those boats subject to a boat safety scheme operated by a navigation authority? If you feel such boats should be excluded in some way, which of the provisions of the Regulations do you feel should be disapplied in these circumstances?

Extension of GS(IU)R to cover all premises

Present position

224. As previously noted, the current Regulations do not apply to certain premises, e.g. 'industrial' premises and some inland waterway boats and caravans. Furthermore, most of the options put forward on scope as discussed earlier (apart from caravans/boats) have involved additional exclusions to cover specific situations.

Views expressed

225. It has been suggested by some people that the current exceptions, which effectively distinguish between gas safety requirements at different places, are illogical, as broadly the same hazard exists in all situations, and warrants similar legal control. On this basis, they argue that the Regulations, as with the original (1972) version, should apply largely across the board. However, this may have significant resource implications (see below).

Supporting arguments

226. The following points have been put forward in support of extending the Regulations to all premises:

- W** the current exclusions are illogical and insupportable from a safety standpoint. The hazard from use of gas is broadly the same, irrespective of the premises concerned. Similar regulatory protection should therefore be provided in all premises;
- W** most of the practical problems which have led to further requests for exceptions, e.g. for 'non-domestic' gas work, are related to registration (and associated competence assessment); these could be addressed in ways which do not involve the need to exclude premises concerned from the scope of GS(IU)R. For instance, more flexibility could be provided in defining options for competence (see paragraphs 133-134), possibly in a new ACoP on training/competence requirements; legal exclusions alone would not in any case address all of these problems;
- W** with increased flexibility in practical/administrative arrangements, eg in the competence assessment regime, all premises (and possibly all gas fittings/appliances) could be brought within the scope of the Regulations, without imposing significant

extra burdens on dutyholders, and with the major advantage of providing greater simplicity and consistency in the way in which the law is applied.

Opposing arguments

227. The following points have been put forward against extending the scope of GS(IU)R to cover all premises:

- W** the exceptions for certain premises are consistent with an approach of targeting the Regulations on protection of the public in their homes (rented or otherwise), and in other places they visit, eg for shopping, educational or leisure purposes;
- W** it is important to distinguish between these types of premises used for domestic and related activities, and others used for 'industrial' purposes where different health and safety regimes apply, affording similar gas safety protection but through a 'goal setting' regime, more suited to the working practice of the 'non-domestic' sector;
- W** it is not sufficient to rely on administrative arrangements to address problems (eg concerning flexibility in competence assessment); specific legal exclusion is required to provide the necessary reassurance against future misinterpretation;
- W** any extension in the scope of the Regulations could have significant cost/resource implications, e.g., for industry and enforcing authorities.

Question 62 - Provided that practical concerns can be addressed (eg by more flexibility in operation of the registration/competence regime), what is your view on extending the Regulations, as far as possible, to cover (a) all premises, or (b) all gas fittings/appliances, or (c) all premises and all gas fittings/appliances?

Definition of scope by type of appliance rather than premises

Present position

228. As noted in paragraphs 195-197 and 207-208, the scope of the existing Regulations is mainly defined in terms of premises (eg through the exceptions specified in regulation 2(3)-(4)), rather than by type of gas equipment covered. This means that a particular gas appliance will be covered by the Regulations when installed in (say) office premises, whereas the same equipment is excluded when located in an 'industrial' workplace.

Views expressed

229. It has been argued that the present approach is illogical from a safety standpoint, and that the scope of the Regulations should be based on the type of gas equipment, rather than nature of premises concerned. Some bodies have suggested that this might be done by structuring the Regulations on ACS competence modules. It has been suggested that a distinction might be made between types of appliance based on heat input, eg as used in British Standards, where 60kW or 70kW has been applied as a maximum cutoff figure for domestic gas appliances in some cases.

Supporting arguments

230. The following points have been put forward in support of defining scope by gas equipment type rather than premises:

- w** it is both illogical and insupportable from a safety standpoint to apply different gas safety control regimes to a particular appliance, when it will present a similar risk, irrespective of the premises where it is installed;
- w** basing scope on appliance type would also provide a logical means for addressing problems encountered in applying prescriptive requirements of GS(IU)R to large/specialised gas equipment (this particular issue is separately discussed in paragraphs 207-212).

Opposing arguments

231. The following points have been put forward against defining scope by type of gas equipment (i.e. for retaining the status quo):

- w** a clear and workable legal definition of scope based on gas equipment type could be difficult to achieve in practice. For instance, defining particular types/classes of equipment or specifying a limit on heat input are both likely to lead to problems, eg where assumptions on which parameters are based cannot take into account future technological developments. Against this, it has been argued that a maximum heat input figure has been effectively used to define the scope of several established standards on domestic gas appliances, eg BS EN 297 on gas-fired central heating boilers;
- w** defining scope by appliance type would itself be illogical and lead to major problems in the operation and enforcement of the Regulations. For instance, both dutyholders and inspectors would need to distinguish between those appliances at a given premises which are subject to GS(IU)R (eg including the requirements for any work, such as installation/repairs, to be done by a CORGI-registered installer) and those outwith the Regulations but subject to the general requirements of HSWA. Laying aside the inconsistencies in control, this approach would introduce unnecessary complexity, resulting in a reduction in safety compliance because requirements were not properly understood.

Question 63 - What is your view on the way in which requirements should be applied? Do you

feel that scope should primarily be defined by type of gas equipment, or on the basis of premises as in the existing Regulations?

GOAL-SETTING AND SIMPLIFICATION OF REGULATIONS

Present position

232. The present Regulations are detailed and highly prescriptive; many provisions date back to the 1984 (and sometimes the 1972) Regulations, and were based on long-standing practices/standards of the then integrated British Gas Corporation/BG plc. Although there are reasons for this (see below), the prescriptive approach of GS(IU)R runs counter to HSC/HSE's normal 'goal-setting' approach on health and safety controls, i.e. where the broad safety objectives are specified in law (normally risk-assessment based) and detailed information on practical requirements is given in underpinning Approved Codes of Practice and guidance.

Views expressed

233. Views on whether a more goal-setting approach should be adopted in GS(IU)R were broadly similar to those expressed when the same question was raised in the consultation exercise on the 1998 Regulations. Although there was support for a more 'goal setting' approach in the non-domestic sector (i.e. mainly in the sense of relaxing registration and competence assessment requirements, and relying on HSWA control in this respect), most people felt that prescription should be retained for domestic gas work and that the current balance between legal requirements and ACoP/guidance was, in this respect, about right. A few bodies suggested that limited goal-setting might be acceptable also in the domestic sector, provided that additional clear supporting guidance was given in the associated ACoP commentary. There was general agreement on the need to retain detailed prescription in regard to landlords' duties. Some people requested clarification of what is meant by 'goal setting', by way of examples to help them comment (suggestions for applying this approach are given in the following paragraph and Annex 6).

234. Few specific proposals were put forward for goal-setting in GS(IU)R. However, the following suggestions have been made:

(a) reserve prescription for those provisions of GS(IU)R which are widely applied, and apply goal-setting in other areas. It has been pointed out that, of the 40 or so regulations, only a handful are regularly applied, e.g. in legal action; these are regulations 3-6 (competence/registration and general safety precautions), regulation 8 (alteration of premises/gas fittings etc), regulations 26-27 (gas appliances and flues), regulation 30 (restrictions on certain appliances), regulation 34 (dangerous gas appliances) and regulation 36 (landlords' duties). On this basis, it has been suggested that such requirements should be retained in prescriptive form, but that there might be scope to cover other detailed technical provisions (e.g. installation of pipework and meters) by a general requirement along the lines of existing regulation 5(3) which requires work to be carried out in accordance with 'appropriate standards', extended as necessary to cover safety not only in manner in which the work is undertaken but also in terms of the safety of the installation which results, i.e. when it is taken into use. Further advice on these matters (including the material currently included in the regulations concerned) could then be given in ACoP and guidance, cross-referencing to relevant industry/British standards.

Essentially, this would be a hybrid formula which, it has been argued, would provide a simpler and more flexible set of regulations, without prejudicing enforcement potential.

(b) apply a 'safety plan' regime for large-scale gas work, i.e. to replace GS(IU)R prescriptive controls for such work (see also paragraphs 198-206). It has been proposed that for large-scale gas work carried out in building construction, the main contractor should be required to produce a safety plan, showing how 'end user' gas risks would be managed, e.g. by clear allocation of responsibilities to contractors and sub-contractors. Whereas, existing planning/risk assessment requirements under CDM Regulations address the safety of building construction and related operations (e.g. maintenance/demolition) themselves, this proposal would extend such requirements explicitly to address measures for ensuring the final safety of the gas system when taken into use, i.e. by building occupants. This would obviously represent a significant extension in current controls, particularly as it could be argued that a similar approach might also be applied to other areas, including planning for 'end use' safety of buildings and related services generally. However, others have pointed out that there might be an overlap here, i.e., with requirements under Building Regulations.

235. Some further specific suggestions on 'goal setting' and simplification of the Regulations are given in Annex 6.

Supporting arguments

236. The following points have been put forward in support of adopting a more goal-setting approach in the Regulations:

- W** the existing prescription provides limited flexibility, for instance to respond to changes in working practice and technological developments. This causes practical difficulties, e.g. in interpreting requirements or even prohibiting new approaches which might otherwise provide equal or greater levels of safety;
- W** although some argue that prescription provides tighter control, this is not necessarily the case. Requirements can be so tightly defined that loopholes and gaps in safety cover can arise (a number had to be addressed by the 1998 revision);
- W** a highly prescriptive approach can lead to 'tunnel vision' or a 'checklist' mentality where duty holders rely too much on being told what to do, rather than thinking through problems for themselves (i.e. by a risk assessment-based approach). This again can lead to lower safety standards;
- W** the inevitable consequence of prescription is that Regulations have to be repeatedly amended/revised to update and correct earlier deficiencies and fill unsuspected legal gaps (there have been 3 statutory instruments revising GS(IU)R since 1994 alone and HSE is already aware of a further series of detailed changes that might be necessary if the existing format for GS(IU)R is retained);
- W** revision of prescriptive legislation is a complex and difficult process. Sometimes, unintended knock-on effects arising from a minor change only become clear from experience of practical problems after the Regulations come into force, leading to the need for further changes to legislation and possible confusion and misunderstanding.

Opposing arguments

237. The following points have been put forward against goal-setting, i.e. in favour of retaining the existing prescriptive approach in the Regulations:

- W** prescription is justified given the nature of the risk addressed, the high public profile and the range of situations covered, particularly those related to rented accommodation;
- W** prescription provides maximum clarity, which is particularly important for the many small gas installation businesses working in the domestic sector, as well as for landlords and gas consumers whose technical expertise might be expected to be limited;
- W** there is a continuing state of flux in the industry (i.e. following 'liberalisation') which means that it does not have the necessary maturity and stability to safely move away from a prescriptive approach. In particular, there is no longer the facility to call upon the wealth of expertise previously made available by British Gas. This means that a 'clear set of rules', which can be easily understood and enforced, remains essential, at least for the foreseeable future.

W

Question 64 - What are your views over whether the current detailed and prescriptive approach in GS(IU)R should be retained (i.e. without change) for (a) the domestic sector, or (b) the non-domestic sector, or (c) both sectors?

Question 65 - What are your views on the principle of introducing a more goal-setting approach to cover certain provisions, while retaining prescription for others, i.e. a hybrid approach as discussed in paragraph 234(a)?

Question 66 - If you agree that limited goal-setting should be introduced as above, do you consider that this should apply to (a) the domestic sector, or (b) the non-domestic sector, or (c) both sectors.

Question 67 - What are your views on the proposal in paragraph 234(b) above, for introducing a 'safety plan' regime for large-scale gas work carried out during building construction?

Question 68 - Do you agree with any of the specific changes suggested in Annex 6? If so, please specify which of these you support.

Question 69 - Do you have any further suggestions for simplifying requirements in GS(IU)R or replacing particular regulations by more goal-setting provisions? If so, please give details.

DEFINITIONS

‘Gas appliance’ and ‘gas fitting’

Present position

238. The present definitions of ‘gas appliance’ and ‘gas fitting’ are fairly all-embracing in terms of equipment designed for use by gas consumers, although certain exclusions are provided, e.g. which disapply portable/mobile appliances supplied with gas from a cylinder from most of the Regulations. Flues are specifically covered by some regulations (e.g. 27, 35 and 36), but are not included in either the definition of ‘gas appliance’ or ‘gas fitting’.

Views expressed

239. Those consulted so far in the Review made few comments on the definitions. However, some felt that, because of the critical role of flues in gas safety, there might be scope for extending controls (e.g. to require anyone working on a flue to be competent under GS(IU)R regulation 3); it was suggested that one way of achieving this would be to extend the definition of ‘gas appliance’ to cover any associated flue. However, reservations were expressed by others, that, without qualification, such a change would effectively apply CORGI registration requirements to builders and chimney sweeps working on chimneys (a chimney is included in the meaning of ‘flue’ for purposes of GS(IU)R). They felt that the latter would be a serious distortion of the current CORGI remit (see paragraph 98-99).

Question 70 - What are your views on whether existing definitions, e.g. of ‘gas appliance’ and ‘gas fitting’ should be amended in any way?

Question 71 - Do you consider that requirements of GS(IU)R in regard to flues should be changed, e.g. to bring any work on a flue/chimney within the scope of competence requirements (please give details of any suggested change)?

‘Work in relation to a gas fitting’

Present position

240. The current definition of ‘work in relation to a gas fitting’, while prescribing a list of specific activities, is not limited to these (the term is defined to include these activities). This somewhat prescriptive, yet open-ended approach has led to many enquiries and requests for clarification, because the definition is crucial to application of work-related requirements under GS(IU)R, e.g. registration and associated competence requirements.

Views expressed

241. Few of the bodies so far consulted in the Review commented on the meaning of ‘work’ and these were divided on the question of whether the existing definition should be retained, or replaced by a more general ‘goal-setting’ (i.e. risk assessment based) approach. This broadly reflected the response in the GS(IU)R 1998 consultation exercise, which included a ‘goal-setting’ proposal restricting the definition to those activities ‘which may affect gas safety’ (while still retaining the illustrative list of activities, also subject to that qualifying condition). Those previously supportive of this proposal, again maintained that an approach along these lines should be pursued in the current Review. However, others felt that the existing approach (which leaves no discretion over ‘what might affect safety’) should be retained, particularly for work in the domestic sector.

Supporting arguments

242. The following points have been made in support of providing a more ‘goal-setting’ (risk assessment-based) definition of ‘work’, i.e. related to activities which may affect gas safety:

- W** while interpretation is finally a matter for a court to decide, the present definition does not specifically exclude activities which have no potential to affect gas safety, e.g. placing of notices on meters. It was never intended that such peripheral activities should be covered but a change in the definition as proposed would make this absolutely clear. Further, although the whole purpose of the Regulations largely precludes application to activities not connected with gas safety (e.g. purely electrical or mechanical matters associated with gas systems), a change in the definition as proposed would avoid any risk of confusion in this respect;
- W** as well as making clear what is excluded (as above), the proposed approach would also avoid any doubt over the fact that all activities which can affect in any way the safety of a gas fitting are covered;
- W** qualifying the definition, as proposed would promote a ‘risk assessment’ approach by gas installers, in line with requirements under HSWA and MHSWR. This would encourage people to think more about the risks associated with work to be performed, rather than to adopt a narrow ‘tunnel vision’ or ‘check list’ approach, relying solely on prescriptive requirements of GS(IU)R;
- W** the proposed approach would avoid the need to list specific activities in the definition, and the associated problems of updating this list (several additions were made in 1998, which had knock-on effects).

Opposing arguments

243. The following points have been made against adopting a more goal-setting definition, i.e. for retaining the current approach:

- W** there is no evidence of a problem due to the present definition being too inclusive. Restricting the definition to those activities which may affect gas safety would have little practical effect, as there are very few work activities which can be carried out on a gas fitting which do not have any potential to affect gas safety, e.g. if done incorrectly;
- W** amending the definition in the above way would actually reduce rather than improve legal clarity, and the resulting confusion could have serious safety repercussions, given that the definition plays a crucial role in determining application of key requirements of GS(IU)R, e.g. installer competence and registration. The proposed change would simply provide a charter for lawyers to argue over what is meant by ‘activities which may affect safety’ and make enforcement more time-consuming. Removal of the illustrative list of activities would only serve to compound this problem. Against this it has been argued that information on activities included could be included in ACoP guidance, which would be easier to update than a legal definition;
- W** it is unclear who would be competent to assess the risk, and make the necessary judgment over what comprises ‘work which may affect safety’, and therefore requires use of a registered installer. In particular, this could be a major problem for small businesses, where the maximum clarity offered by the existing definition is crucial. Against this it has been argued that companies are already required to employ people with the necessary competence to make such decisions, in order to comply with HSWA and MHSWR;
- W** giving more scope for discretion could lead to a reduction in safety standards, because it would be open to abuse by people wanting to circumvent the law, e.g. by employing non-registered gas installers;
- W** it is important to recognise that the definition of ‘work in relation to a gas fitting’ not only has a direct influence on application of GS(IU)R competence and registration requirements, but also indirectly governs application of requirements (e.g. for tests/examinations in regulation 26) which apply to the far more restrictive term ‘work in relation to a gas appliance’. Even if a goal setting approach is appropriate for application of some areas of GS(IU)R, it might not be so in others.

Question 72 - What is your view on whether the existing definition of ‘work’ should be replaced by a more goal-setting definition?

Question 73 - If you agree that a more goal-setting approach should be adopted, do you feel this should be done (a) by limiting the definition to work which has the potential to affect gas safety but retaining a list of specific activities included in the meaning, (b) limiting the definition as in

(a) but not referring to any specific activities covered by the definition, or (c) some other approach (please give details)?

Question 74 - If you agree with a more goal-setting definition, do you feel this should apply to: (a) to all work covered by the Regulations or only to work in the non-domestic sector; (b) all work-related provisions in GS(IU)R or only some of these requirements (if the latter, please specify the regulations where you feel application should be governed by the goal-setting definition of work)?

INTERFACES WITH OTHER LEGISLATION

Present position

244. The Regulations have an interface with requirements (both on general safety, and those specific to gas) under a range of other legislation. By way of illustration, a few examples are given below:

- (i) *Health and Safety at Work etc Act 1974 (HSWA)*. The general duties for ensuring, so far as is reasonably practicable, the health and safety of employees and members of the public are applicable to people involved in activities connected with gas (e.g. gas installation businesses, gas suppliers and landlords), as they are to all other employers/self-employed persons. These general health and safety duties underpin the more specific ones for gas under GS(IU)R.
- (ii). *Management of Health and Safety at Work Regulations 1992 (as amended) (MHSWR)*. The requirements (e.g. for ensuring hazards are identified, risks are assessed, protective measures are implemented (and kept under review), and proper training is provided for employees) again are applicable to employers/self-employed persons generally, including those involved in activities concerned with gas, as with HSWA. The protective measures provided under MHSWR will cover those necessary to comply with GS(IU)R, but may extend to additional measures for gas, to ensure risks are kept as small as is reasonably practicable, as required by HSWA.
- (iii). *Pipelines Safety Regulations 1996 (PSR)*. These Regulations cover health and safety requirements for pipelines, eg. concerning their design, construction, installation and maintenance. These requirements directly link to GS(IU)R as they cover pipes supplying gas to premises, including gas transmission pipes, distribution mains and service pipes, i.e. parts of a natural gas system upstream of the ‘installation and use’ end, as covered by GS(IU)R.
- (iv). *Gas Safety (Management) Regulations 1996 (GSMR)*. These mainly cover management of the safe flow of natural gas in a pipe system/network, including requirements for safety cases to be prepared by gas conveyors and network emergency co-ordinators, and submitted to HSE. In addition to this link to safety at the ‘user end’ (as covered by GS(IU)R), there is a further interface in that GSMR imposes requirements for emergency response in relation to escapes of natural gas, whereas GS(IU)R addresses similar matters for other fuel gases, e.g. LPG.
- (v) *Gas Appliances (Safety) Regulations (GASR)* These implement the ‘Gas Appliances Directive’ and require appliances and fittings to which they apply (i.e. new equipment) to conform with specified essential safety requirements and to be safe when normally used. Supply of these products is prohibited unless they bear the CE marking and safety is underpinned by certification/declaration of conformity. The Regulations detail procedures for product conformity attestation by third-party notified bodies, appointed by the Secretary of State. There are direct links with GS(IU)R, e.g. the latter prohibits installation of any appliance requiring CE marking, unless the product bears this mark, and GS(IU)R also requires manufacturers’ instructions for installation, maintenance and use of appliances (required under GASR) to be passed by the installer to the responsible person for the premises where the appliance is installed. (NB The safety of second-hand gas appliances is covered by separate legislation, including the Gas Cooking Appliances (Safety) Regulations 1989, the Heating Appliances (Fireguards) Safety Regulations 1989, and the General Product Safety Regulations 1994 which implement the EC General Product Safety Directive. These Regulations generally provide that suppliers of second-hand gas appliances must ensure that only consumer-safe products can be marketed. As with GASR, there is an interface with GS(IU)R, e.g. which provides for safe installation and maintenance of second-hand gas appliances in the same way as for new equipment).

(vi). *Building Regulations 1991 and Building Standards (Scotland) Regulations 1990*. These Regulations include requirements for safe installation of heat producing (e.g. gas) appliances and associated flues/chimneys, during construction/modification of buildings. These general provisions (and more detailed guidance in Approved Documents/technical standards) link directly with requirements under GS(IU)R.

(vii). *Housing (Management of Houses in Multiple Occupation) Regulations 1990 and the Housing (Scotland) Act 1987*. These provisions include duties on landlords to maintain certain gas installations (including common services). There is a direct link between these controls and the duties of landlords under GS(IU)R to ensure gas equipment provided for tenants' use is properly maintained and subjected to an annual safety check (see paragraphs 174-175).

Views expressed

245. The ACoP on GS(IU)R 1998 gives information on links between the Regulations and other related controls. Those bodies initially consulted in the Review considered this information to be crucial, as an aid to identify and address the various legal obligations. Placing the prescriptive requirements of GS(IU)R in the overall context of HSWA/MHSWR (and the associated 'risk assessment' approach) was considered particularly important, e.g. to remind gas installers of their wider safety responsibilities and guard against 'tunnel vision'. However, the following proposals were made in regard to further information and clarification on legal interfaces:

(a) links with related controls need to be clear, and requirements should be consistent overall. Problems were identified, in particular, with respect to current links with Building Regulations and HMO legislation. The importance of addressing difficulties (e.g. by simplifying the law and avoiding duplication wherever possible) during revision of the legislation concerned was stressed by several bodies;

(b) additional cross-references should be made in the ACoP to related controls. In line with (a) above, it was felt important to refer more specifically to relevant requirements of Building Regulations (and Approved Document J and technical standards on heat producing appliances), as well as HMO legislation. This was considered particularly important to take into account proposed changes to this legislation, which would provide closer links with GS(IU)R;

(c) the interface with the Pipelines Safety Regulations should be clarified. As noted earlier, there is a direct interface between PSR (which covers the 'upstream' part of the gas supply system), and GS(IU)R, which deals with similar 'hardware' issues (e.g. on pipe construction, maintenance etc.), primarily at the 'user' end. In legal terms, the limit to which PSR applies (and GS(IU)R takes over) is defined by the end of the 'service pipe', i.e. the outlet of the first emergency control on premises, downstream from the distribution main. To avoid any gaps in control and ensure legal duties are properly defined, it is obviously crucial for this interface point, in practice, to be clear and unambiguous. While the Regulations concerned already recognise this need (e.g. by using common definitions of key terms, such as 'service pipe', 'emergency control' and 'installation pipework'), some bodies felt the position still to be unclear in certain situations, for instance where meters are remote from premises. Related questions were also raised in respect of GSMR, e.g. concerning application of safety case requirements to multi-occupancy installations; these are being separately considered in the current review of those Regulations;

(d) the interface between PSR and GS(IU)R should be reviewed. It has been argued that the current interface, as discussed in (c) above, is becoming increasingly 'artificial' in practical terms, i.e. because installers and Emergency Service Providers largely treat the gas supply/use system as a 'single

stream' process. Although specific proposals (e.g. for redefining the 'cutoff' between PSR and GS(IU)R) have not been put forward, it has been suggested that this matter be addressed in the reviews currently being undertaken on both of these Regulations.

Question 75 - What are your views on the need for further action as in paragraph 245(a)-(d) above, to clarify and provide further information on interfaces between GS(IU)R and related controls?

Question 76 - Are there any other circumstances, i.e. not covered by the above proposals, where you consider that the interface with GS(IU)R needs further clarification (if so, please give details)?

SUMMARY OF MAIN REQUIREMENTS OF THE GAS SAFETY (INSTALLATION AND USE) REGULATIONS 1998 (GS(IU)R)

1 For the purposes of the Regulations;

- W** “gas” includes (a) methane, ethane, propane, butane, hydrogen and carbon monoxide; (b) a mixture of any two or more of these gases, (c) a combustible mixture of one or more of these gases and air, and (d) a mixture mainly composed of (a), (b) or (c) and containing another gas (e.g. a flammable, non-flammable or inert gas not itself covered by the definition);
- W** “gas appliances” are those appliances designed to be used by a consumer for heating, lighting, cooking or other purposes for which gas can be used. However, portable or mobile appliances supplied with gas from a cylinder, or the cylinder, pipes and other fittings used for supplying gas to that appliance are not included, except some parts of the Regulations (e.g. landlords maintenance and safety checks) do apply to portable or mobile space heaters;
- W** “gas fittings” means gas pipework, valves (other than emergency controls), regulators and meters, and fittings, apparatus and appliances designed for use by consumers of gas for heating, lighting, cooking or other purposes for which gas can be used (other than the purpose of an industrial process carried out on industrial premises).

2. The Regulations apply to all domestic premises (rented or otherwise) and most commercial premises, including residential premises (such as hotels, holiday accommodation etc) and the majority of rented domestic premises. They also apply to certain caravans and inland waterway craft (in general those hired out in the course of a business or those used as a business which may be used by members of the general public, i.e. floating or mobile restaurants). However, in general the Regulations do not apply to the supply of gas to, or anything done in respect of a gas fitting at, the following premises:

- W** a mine or quarry within the meaning of the Mines and Quarries Act 1954 or any place deemed to form part of a mine or quarry for the purposes of that Act;
- W** a factory within the meaning of the Factories Act 1961, or any place to which any provisions of the said Act apply by virtue of sections 123 to 126 of that Act;
- W** agricultural premises, being agricultural land, including land being or forming part of a market garden, and any building on it which is used in connection with agricultural operations;
- W** temporary installations used in connection with any construction work within the meaning assigned to that phrase in the Construction (Design and Management) Regulations 1994.
- W** premises used for testing of gas fittings

W sewerage treatment works

3. Nothing in the Regulations applies in relation to the supply of gas, or anything done in respect of a gas fitting to: a seagoing ship or a hovercraft; a self-propelled vehicle except when it is hired out in the course of business or made available to members of the public in the course of a business carried out from that vehicle; inland waterway craft except when they are hired out in the course of a business, made available to members of the public in the course of a business carried out from that vessel, or used primarily for domestic or residential accommodation, or a caravan used for touring except when hired out in the course of a business.

4. Nothing in the Regulations applies to the supply of gas to the propulsion system of any vehicle or to any gas fitting forming part of the propulsion system; the supply of gas to, or anything done with a Bunsen burner used in an educational establishment or work in relation to a control device on a gas appliance if the device is intended primarily for use by a consumer of gas and the work does not involve breaking into a gasway. Also, there are certain exceptions from the Regulations for gas training establishments and assessment centres.

5. The Regulations, subject to certain exceptions/provisos:

W require work on a gas fitting to be carried out only by a competent person (including those who are employed or self-employed in gas work and those people who undertake DIY gaswork); and employers of gas fitting operatives, together with other specified persons (e.g. those in control of the work such as building contractors), to ensure that operatives have the required competence for the particular work to be done. Employers of persons carrying out work on gas fittings/service pipework and self-employed persons doing this work are required to be a member of a class of persons approved by HSE; currently this means they need to be registered with the Council for Registered Gas Installers (CORGI) (regulation 3);

W require any employer or self-employed person requiring work to be done on a gas fitting, or in control to any extent of such work (e.g. a contractor), to take steps to ensure the person doing the work is, or is employed by a business that is, registered with CORGI (regulation 4);

W require an installer of a gas fitting to ensure that the fitting is suitable for the purpose for which it is to be used. Installation of lead pipe/fittings is prohibited and controls are placed on the use of non-metallic pipe/fittings. Any work on a gas fitting/storage vessel is required to comply with appropriate standards and to be done in a manner which avoids danger to any person (regulation 5);

W specify measures to be taken by any person working on a gas fitting against danger from gas release, and requirements for sealing gasways and testing gastightness after work is completed. Use of ignition sources is prohibited where there is a risk of fire/explosion, e.g. in searching for a gas leak. Requirements are specified for safe installation of gas (e.g. LPG) storage vessels, and the storage of natural gas at domestic premises is prohibited (regulation 6);

W require gas fittings to be protected from damage, including corrosion, and from blockage by a foreign body, e.g. dirt/dust (regulation 7);

- W** prohibit any alteration to premises in which a gas fitting or storage vessel is installed which causes the fitting or storage no longer to comply with the Regulations, as well as work on a gas fitting or associated flue/ventilation system which results in danger to any person (regulation 8);
- W** require an emergency control to be provided when gas is first supplied to premises. Where this control is not adjacent to a meter, a notice is required to be posted adjacent to the control, describing the procedure in event of a gas escape (regulation 9);
- W** require electrical continuity to be maintained during work on a gas fitting, where necessary to prevent danger (regulation 10);
- W** require gas meters to be installed so as to avoid, as far as is reasonably practicable, adverse effect on means of escape from premises, and specify requirements concerning construction of certain meters. Other requirements are imposed for meter installation, e.g. to avoid electrical hazards and facilitate inspection/maintenance, and for pipe connections, gastightness tests and purging of meters (regulations 11 -12);
- W** specify requirements for meter housings concerning safe dispersal of any gas escape, avoidance of combustible materials, and provision of keys to enable consumer access (regulation 13);
- W** stipulate protection arrangements to maintain gas pressure within safe limits, in the case of systems supplied from gas storage tanks or vessels (e.g. LPG), or from certain cylinder configurations. Requirements are also included for sealing of regulators against unauthorised interference (regulation 14);
- W** require an emergency notice to be posted at a primary meter, giving the procedure to be adopted in the event of a gas escape; a notice showing the position of the emergency control is also required in certain cases (regulation 15);
- W** prohibit installation of a pre-payment meter as a primary meter in certain cases and specify requirements for notices at primary meters where gas is supplied to more than one secondary meter. Precautions, e.g. for isolation/sealing, are also specified for situations where a primary meter has been removed (regulation 16);
- W** require any person supplying or permitting the supply of gas through a primary meter to a secondary meter (e.g. a landlord), to display at specified positions, a notice showing the configuration of the gas system (regulation 17);
- W** require installation pipework to be installed in a safe position having regard to factors which might affect safety, e.g. location of other pipes, drains, cables and electrical apparatus. Any person connecting installation pipework to a meter is required to inform the person responsible for the premises (e.g. the occupier) of the need for equipotential bonding by a competent person (regulation 18);
- W** specify restrictions and protective measures for pipes passing through solid walls and floors, cavity walls and building foundations: conditions are stipulated whereby pipework associated with “living flame effect fires” may be run in a cavity wall. Ducts and voids accommodating installation pipework are required to be adequately ventilated (regulation 19):

- W** require installation pipework to be installed so as to avoid impairing the structure or fire resistance of a building (regulation 20);
- W** require a receptor to be fitted to installation pipework where liquid or solid deposits may occur, e.g. from “wet gas” (regulation 21);
- W** specify requirements for gastightness testing after work has been done on installation paperwork, and for purging/sealing of such pipework both in cases where gas is being supplied to the premises where it is installed, and where it is not being so supplied (regulation 22);
- W** require installation pipework, other than in premises or parts of premises used only as a dwelling or living accommodation, to be marked, e.g. colour coded, in any position accessible to inspection, to identify that it is carrying gas (regulation 23);
- W** require a valve to be fitted in certain installation pipework and a system diagram provided (e.g. for use by emergency services), where service pipe/pipework exceeding specified sizes feeds certain buildings or floor areas (regulation 24);
- W** require any person installing a gas appliance to ensure it is safe for use; is not left connected to the gas supply unless it can be used safely; it complies with other relevant safety requirements (e.g. gas appliances safety legislation), and that any second-hand appliance is in a safe condition for further use. Any work on an appliance is required to maintain safety standards and requirements are specified for the examination of any appliance after work has been done, and for notification of any defect to the owner/user (regulation 26);
- W** require any flue to be suitable and in a proper condition for safe operation of the appliance which it serves, and any power-operated flue system to prevent operation of the appliance if the draught fails. Requirements to enable inspection of, and to prevent spillage of combustion products from, certain flues are specified; and any flue is required to be installed in a safe position (regulation 27);
- W** require a gas appliance to be installed in a position readily accessible for operation, inspection and maintenance (regulation 28);
- W** require the installer of a gas appliance to leave the manufacturer’s instructions for the appliance, for the use of the owner or occupier of the premises where the appliance is installed (regulation 29);
- W** prohibit the installation of certain gas appliances in specified rooms unless the appliance is room-sealed. In other specified locations, certain appliances are required to be room-sealed or fitted with a device to cause shutdown before a dangerous quantity of combustion products can build up in the room concerned; a **general** prohibition is placed on the installation of any instantaneous water heating appliance, unless it is room-sealed or fitted with such a device (regulation 30);
- W** prohibit installation of suspended appliances unless the installation pipework is capable of supporting the weight imposed and the appliance is designed to be so supported (regulation 31);

- W** specify requirements for interlocking of automatic flue dampers, and their inspection. Installation of a manual damper on a flue connected to a domestic appliance is prohibited, and where an appliance is installed to an existing flue incorporating a manual flue damper, the damper is required to be permanently fixed in the open position (regulation 32);
- W** specify requirements for testing gas tightness and examining appliances, flues, ventilation etc., and action where adjustments are necessary; in cases where a gas appliance is installed at a time when gas is being supplied to the premises concerned. Requirements are also specified where installation takes place when gas is not being supplied to the premises (regulation 33);
- W** require a responsible person for any premises (for instance, the occupier/owner of the premises, e.g. landlord) not to use or permit the use of any unsafe appliance. Persons carrying out specified work, e.g. on service pipes or gas fittings, are required to report any appliance they suspect as being dangerous to the responsible person for the premises, or where this person is not available, to the gas supplier or transporter, as appropriate (regulation 34);
- W** require an employer or self-employed person to ensure that any gas appliance, flue or installation pipework installed at a place of work they control is maintained in a safe condition (regulation 35);
- W** require landlords, in specified circumstances, to ensure safe maintenance of gas appliances, flues and installation pipework installed in premises under their control, that annual safety checks are carried on such appliances/flues and that a record is kept and issued (or in certain cases, displayed) to tenants. Landlords are also required to ensure that no gas fitting of a type that would contravene regulation 30 (e.g. certain instantaneous water heaters) is fitted in any room occupied or to be occupied as sleeping accommodation after 31 October 1998 when the Regulations came into force. This includes any room converted into such accommodation after that time. (regulation 36);
- W** specify action to be taken by gas suppliers and persons responsible for premises in event of an escape of gas **other than** natural gas (as covered by the Gas Safety (Management) Regulations 1996); this extends to the emission of, or suspected emission of, carbon monoxide from an appliance using gas, other than natural gas supplied from a network (regulation 37);
- W** require protective measures as stipulated by the gas transporter, to be taken by a consumer where gas is used with plant (such as a compressor or engine) liable to cause dangerous fluctuation pressure in the gas supply, or where an extraneous gas (e.g. compressed air) is used in connection with the consumption of gas (regulation 38).

Business Strategy Group
Research Project for the
Health & Safety Executive
CONTRIBUTION TO THE GAS REVIEW
EXECUTIVE SUMMARY
"Gas In Relation To Other Domestic Risks"
August 1999

The Background to the Research

The Health & Safety Executive (HSE) is currently undertaking a fundamental review of the health and safety regime governing the installation and use of gas, to assess its effectiveness in promoting gas safety, and to determine whether, or how far, the current system should be changed. The purpose is to set a satisfactory and viable regulatory framework for the medium to long term and to help in directing safety campaigns.

This study is concerned with a detailed analysis of HSE's own internal statistics. The study is also required to place gas safety in the hierarchy of risk, against other fuels and the risks encountered in the home, by reference to the DTI HASS (Home Accident Surveillance System), information on fatalities from the ONS (Office of National Statistics) and risks elsewhere within Europe.

The research programme was conducted in a number of overlapping sections:

HSE internal data relating to gas incidents

The BSG analysis was based on: the HSE Focus database relating to flammable gas incidents for the three fiscal years, 1996/7, 97/8 and 98/9; copies of all the relevant investigation and contact reports; and, where appropriate, copies of the Transco F2508G reports (from which the HSE database entries are extracted).

HSE specified that only serious incidents and fatalities caused by accidents in the home should be analysed. Serious was defined as "one or more days in hospital". HSE data is recorded under the classification of either fatal or major; the data on major incidents was filtered to exclude those incidents/casualties that did not fall within the definition.

BSG coded additional data from 'text' comments in the Focus database, from investigation reports, contact reports and F2508G forms.

HASS Data

The DTI maintains a Home Accident Surveillance System (HASS). This samples 18 hospital Accident and Emergency units across the country, recording accident information from which national estimates can be made.

BSG accessed and analysed information from the DTI HASS database for the two calendar years 1996 and 1997, filtered to include only those patients admitted as in-patients for one day or more – i.e.

matching the HSE definition of serious injury. In 1996, the latest year for which full HASS data has been published, those patients admitted for one day or more represented 6% of the total of accident and emergency cases recorded by HASS.

In addition, HASS incident records were extracted for all incidents involving records mentioning CO poisoning or Cookers. These were manually coded by BSG to filter for those where the cause and injury were relevant to this project.

ONS Data

The Office of National Statistics records coroner's reports on all fatalities. These are coded against EC standard codes for cause of death. BSG accessed a listing of the accidental deaths in dwellings for the two years 1996 and 1997 and the EC coding concerned. The listing was coded by cause of death for age and gender of the deceased. BSG created a database of this data for analysis.

Desk Research

Desk research was undertaken to provide demographic data, household penetration/ownership of appliances and dwelling data.

The Solid Fuel Association (SFA) provided data on fatalities relating to the use of solid fuel appliances to HSE.

European Comparison

Comparative data for the Netherlands was sourced from their Consumer Safety Unit. In the timescale available, an in-depth analysis of all European data was not possible.

EXECUTIVE SUMMARY AND CONCLUSIONS

The risk from gas in the domestic environment is very small and is considerably less than the risk from most common accidents in the home.

Analysis of data from HSE's database and investigation reports show that the major causes of incidents are problems with the flue and the behaviour of the occupants. Private rented property is at high risk. The analysis suggests areas where HSE might encourage the recording and coding of incident data beyond that collected and coded at present.

The risk of fatality or serious injury, defined as one or more days in hospital, from the use of gas appliances in the home has been compared to the risks associated with other fuels and other major causes of serious injury or death in the home for the two years 1996 - 97. The analysis is based on HASS (injury) and ONS (fatality) data.

Analysis of HSE Data

Details from HSE's flammable gas incident database and investigation reports were analysed:

1. There were 312 relevant incidents, i.e. those involving death or serious injury, 1996/7 to 1998/9. 209 incidents had been investigated.

HSE - Kind of Incident by Year, 1996/7 - 98/9

Kind of Incident	<u>1996/7</u>	<u>1997/8</u>	<u>1998/9</u>	<u>Total</u>
Fatal				
Gas	-	-	1	1
CO	27	19	28	74
Fire	1	2	1	4
Explosion	6	5	9	20
Total Fatal	34	26	39	99
Serious				
Gas	2	2	1	5
CO	43	53	57	153
Fire	4	1	1	6
Explosion	19	13	17	49
Total Serious	68	69	76	213
Fatal & Serious	102	95	115	312
Not relevant	41	66	37	144
All incidents	143	161	152	456

There were 227 incidents of CO poisoning, 6 of gas escapes, 10 of fire and 69 of explosion. 312 incidents were found to fit the HSE definition.

144 of the 456 incidents were found not to relate to fatal or serious injuries in dwellings as defined by HSE.

There has been an increase in the number of incidents (both fatal and serious) involving CO. The figures for the three years show an increase from 70 CO incidents in 1996/7 to 85 in 1998/9.

The 312 incidents caused 401 serious injuries and 119 fatalities:

HSE – Casualties by Kind of Incident by Year, 1996/7 - 98/9

Kind of Incident	<i>1996/7</i>	<i>1997/8</i>	<i>1998/9</i>	<i>Total</i>
Fatal				
Gas	-	-	1	1
CO	31	27	33	91
Fire	1	2	1	4
Explosion	8	5	10	23
Total Fatal	40	34	45	119
Serious				
Gas	2	2	1	5
CO	102	100	132	334
Fire	4	1	1	6
Explosion	21	17	18	56
Total Serious	129	120	152	401
Fatal & Serious	169	154	197	520

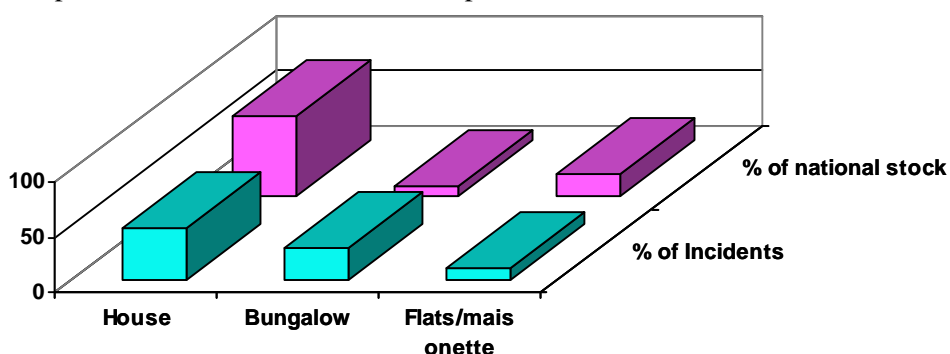
The data by year shows an increase in the number of serious casualties resulting from CO incidents in 1998/9.

2. The numbers of serious or fatal incidents handled by the regions over the three years analysed fall into three distinct bands:

- London & SE covers the most cases (24%);
- The Midlands, Wales & West and Yorkshire & NE each account for between 15% and 18%;
- Home Counties, the NorthWest and Scotland each account for the least number of (9% to 10%).

3. November, December and January are the peak months for incidents.

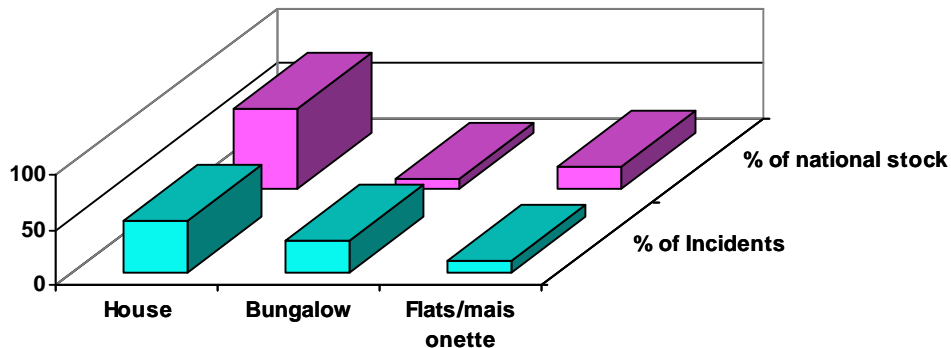
4. Houses account for the largest number of incidents, but the proportion is lower than the national profile for houses and so houses represent a lower relative risk.



Houses account for 59% of HSE incidents, followed by Flats/maisonettes 27% (with flats up to 4 storeys the largest contributor) and Bungalows 9%. (6% are coded to 'other'.) This pattern is different to the national split of housing stock, where Houses account for 72% and Flats/Maisonettes for 19%. Bungalows account for a similar share at 9%.

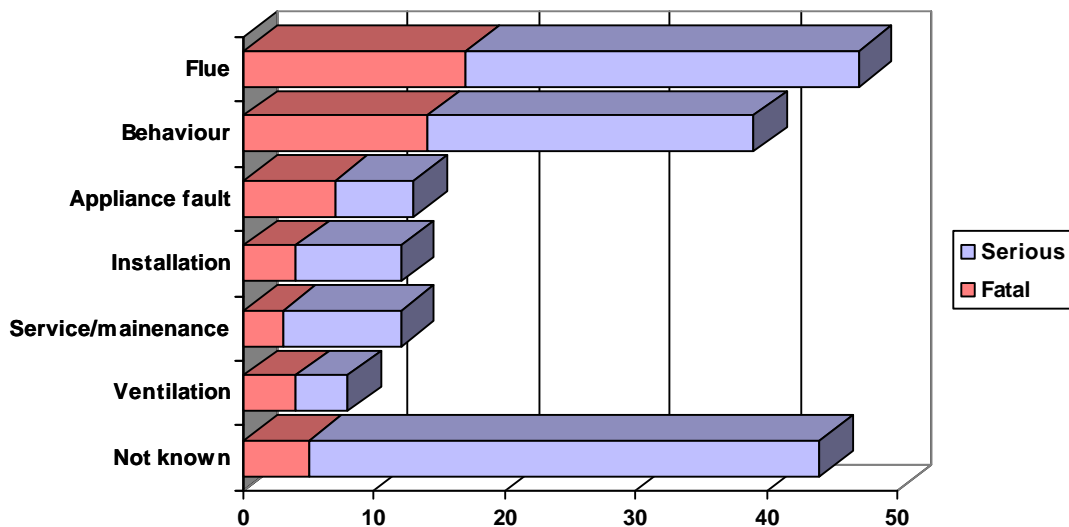
Flats/maisonettes, therefore, are the highest risk property for this type of incident.

5. The proportion of rented (45%) to owner occupied property (55%) in HSE incidents (where specified) was higher than the national picture of 34% rented to 66% owner occupied. Rented property, therefore, represents a significantly higher risk.



Comparison of the relative risk factors (based on the division of the percentage split of HSE by the national percentage split – 100 being the overall average factor) shows that Owner Occupied has the lowest relative risk factor at 83. Local Authority and Housing Association rented both have an average risk factor of 100. Rented accommodation in private ownership is the area of greatest risk with a factor of 190, almost double the risk of other types of rented property.

6. BSG coded as many incidents as was possible, from the detail available, to identify the main factors contributing to the cause of each incident.



Behavioural factors (behaviour of the occupants, landlord or service engineer) were involved in 62% (161 out of 260) of incidents analysed. The most common behavioural factor involved was a failure to have an appliance serviced (26% of incidents). Despite it being a legal requirement for landlords to display a certificate, 23 out of 68 instances of failing to have appliances serviced occurred in rented accommodation. Leaving a gas tap on was also a very significant behavioural factor (11% of incidents). In total behaviour was involved in 51% of incidents. Poor service/maintenance and substandard installation accounted for 19%.

Problems within the system (ventilation, appliance, pipework and flue) were involved in 55% (143 out of 260) of incidents analysed. The most common factor here was an inadequate flue (16% of incidents). In total, problems relating to the flue were involved in 37% of incidents. Inadequate ventilation was also a significant factor (10% of incidents).

7. The elderly appear to be most at risk of fatality, 45% of fatalities related to people over 60. The main risk of serious injury lies with the 20-30s and the under 20s.

8. 43% of incidents occur in the kitchen and 28% in the lounge. Boilers and cookers account for 48% of the appliances involved. Fires, heaters and backboilers account for 24%.

9. LPG accounted for 5% of incidents, mains gas for 73%, while 21% of the incidents could not be coded by fuel. One incident involved solid fuel.

Fatalities

1. ONS data show 15 deaths per year resulted from the incomplete combustion of mains gas or piped LPG, i.e. Carbon Monoxide (CO) poisoning, and a further 9 deaths due to LPG in mobile containers – a total of 24 deaths.

The risk of death from CO can be expressed in different ways:

- Against the population or age/gender group, which allows the particular risk, e.g. CO poisoning, to be compared to other risks that can affect anyone e.g. against the risk of slips or falls. The total UK population is 59 million, 24 deaths per year therefore represents a risk of death from these two specified sources of 0.4 deaths per million (0.4/m) of the total population.
- Against the number of households at risk from a specific item. This is the measure normally used by the gas, electric or solid fuel industry. The risk is measured against the number of households who have access to the fuel or the appliance. It is known that 82% of dwellings have a gas meter i.e. 19.3 million of the 23.5 million total dwellings. 15 deaths due to CO resulted from the use mains gas or piped LPG. In 19.3 million households with a gas meter, this represents a risk of 0.8 deaths per million households at risk. It is not known how many households use LPG in portable containers.
- Against the number of people exposed to the risk i.e. people living in households owning or with access to the specific item. The average household size is 2.4 persons, so there are 46.3 million people living in households with a gas meter and therefore at risk from CO poisoning involving mains gas – 15 deaths represent 0.3 deaths per million people at risk.

1. HSE data show 29 accidental deaths in dwellings per year due to CO poisoning from mains gas and LPG, a risk of 0.5 per million of the total population - or 0.6 per million of the population at risk or 1.5 per million households at risk.

There is a discrepancy between the HSE reporting of fatalities relating to CO and the ONS data of 24 deaths per annum related to mains gas and LPG. Suicides are excluded from the ONS data and some deaths relating to CO poisoning were not clearly defined by the ONS classification and this may account for the difference.

2. ONS data show that CO from solid fuel, oil and paraffin (grouped within international classification) caused 21 deaths (0.4/m). Figures provided by SFA suggest that most, if not all, of the deaths recorded by ONS under this classification were due to solid fuel. SFA data record around 25 deaths per year from CO incidents involving Solid Fuel (though over a different time period).
3. The risk of death from CO (all sources) 1.4/m of the total population. The risk is at its highest for the over 60s - the risk for this age group is 4.2/m for men and 2.6/m for women.
4. Falls (22.8/m), poisonings (13.2/m) and fire (7.5/m) are the main causes of accidental death in the home. The risk from these mechanisms is very much higher than the risk of CO from gas (0.4/m). The ONS classification does not code fire and explosion by fuel.
5. Falls are the main cause of accidental death in the home for the over 60s (86.4/m) and the risk rises with age to almost 500 per million for women over 80. The risk from CO (all sources) is highest in this age group at 3.3/m.
6. Poisoning is the main cause of death in the three age groups: 10 to 19 (6.4/m), 20 to 29 (24.8/m) and 30 to 59 (17.3/m), drugs are the major cause. The risk from CO is relatively low (0.3, 1.0 and 1.1/m respectively).
7. Fire is the main cause of death for the under 10s (5.2/m). The risk from CO is low at less than 0.3/m.

Serious Injuries

1. HASS data show that an estimated 640 serious injuries per year are caused by heating and cooking appliances of all fuel types, with an overall risk of 11 per million of the total population. The overall risk for this category is higher than for individual appliances, as a given household will typically have more than one appliance.
(The following risk data are measured against the population exposed to the risk)
2. Solid fuel fires have the highest exposed risk of heating appliances, at 11 per million, ahead of gas fires (7/m), gas boilers and electric fires/heaters (each at 3 per million).
3. Gas cookers have a higher risk than electric cookers, at 4 per million for gas, against 2 per million for electric. However, an analysis of the individual incidents shows that 96% were caused by the behaviour of the victim. The presence of an open gas flame does create a slightly higher risk than for an electric hob - the risk is low at 3 per million. Electric hobs retain heat which also causes problems - a risk of 1 per million. All other incidents analysed would have happened whatever the fuel.
4. 70% of heating/cooking accidents involve thermal effect (contact with hot part, scald or flames - both from controlled fire e.g. a gas burner, from uncontrolled fire e.g. a fire incident, or from explosion). 15% involve smoke, 10% CO and 5% electric shock.
5. HASS report a national estimate of CO poisoning at 68 incidents per annum involving at least one serious injury, which represents a national estimate of 156 casualties per year and a risk of 2.6 per million of the total population.

It is not known how many of these casualties, over and above the main casualty, were serious.

HSE database shows 51 incidents per year and 111 serious casualties per year. The difference between HSE data and the national estimates from HASS may be due to the high multiplication factor used for HASS and the doubt that all the HASS casualties were serious.

6. The accident mechanism which is the major cause of accidents in the home is Slips/Trips/Falls - this accounts for 73% of all serious injuries in the home - the risk is 1,973 per million. Four other mechanisms account for most of the balance - Striking contact (225/m), cut/crush/puncture (192/m), thermal effect (131/m) and poisoning (107/m).

7. 68% of serious injuries occur while undertaking 'basic' activities e.g. sitting, walking, sleeping, washing, eating etc. - the risk is 782 per million. The elderly are the most at-risk age group within basic activities and the risk increases sharply with age.

8. Play/hobby accounts for 19% (220/m) and children are the most at risk. Household activity accounts for 7% (77/m), affecting mainly women over 60. DIY/maintenance accounts for 6% (71/m), within which gardening is the highest risk (26/m) and affects mainly the over 60s of both sexes.

9. The risk associated with the use of gas is extremely small compared to the risk of serious injury from other activities or other accident mechanisms recorded in the home.

European Comparison

The Netherlands was studied as a useful comparison. In the timescale available, an in-depth analysis of all European data was not possible. Data are not collected on a common basis throughout Europe and, therefore, need to be treated with some caution.

1. The Netherlands Injury Surveillance System shows a slightly different overall pattern of injury mechanism. The cause mechanisms of serious injuries were more dominated by slips/trips/falls at 83% than the UK (72%). Poisoning is the second largest cause at 5%, higher than the UK (3%).

2. Carbon monoxide poisoning represented 27% of the poisoning by gas mechanism. However, the overall risk of CO poisoning was 2.5 per million, a slightly higher risk to that in the UK, estimated at 1.9 per million of the total population based on HSE serious injuries per year.

Recommendations

While the risk from gas is low, compared to other risks of serious injury and death in dwellings, the study indicates several areas where improvements might be made for the future, in order better to identify problem areas, target risk groups and, thereby, prevent future incidents.

1. The analysis shows that the rented sector remains a problem area. It could be, however, that the past figures do not fully reflect the growing impact of the tighter regulations. This is an area that should be monitored and appropriate action taken as necessary.

2. HSE data suggest that 29 incidents resulted from gas taps being left on, often by the elderly. The installation of flame failure devices should be considered, but is unlikely to have any effect in the short term, as the elderly will tend to be using older appliances. However, with an ageing population, it may be a worthwhile safety device to reduce this type of accident in the medium to long term. HSE has raised this issue with the DTI.
3. Behaviour appears to be the largest cause factor in flammable gas incidents. Behaviour is subjective and therefore difficult to record. However, its significance is too great to be ignored. HSE should work with BG and Transco to devise a suitable basis for analysis to allow behaviour to be assessed as one of the contributory causes. This would permit the key behavioural factors identified thereby, to be addressed through appropriate agencies in order to prevent future incidents.
4. Problems with flues and the potential of the weather affecting marginal installations appear to be one of the main causes of gas incidents. This risk should be brought to the attention of CORGI installers and service personnel.
5. HSE may wish to consider redesigning their data collection system to incorporate and code for factors that could be used as an active tool in the prevention of incidents and the targeting of identified problem groups. These should include: age, gender, property ownership, appliance, fuel, the differentiation of CO from gas leaks, and an assessment of the primary cause and other contributory factors – including the option to enter behaviour as the primary or contributory cause.
6. HSE might like to consider circulating the analysis of this additional data to the field service, so that they are fully aware of the trends in this area.
7. While gas represents a relatively low risk area within home accidents overall, several other significant causes of accidents and fatalities in and around the home have been identified by this study. The frail and elderly have also been identified as a very high-risk age group for many accident mechanisms. While HSE does not have responsibility for general household safety, it might usefully help in the avoidance of such accidents and fatalities, by contributing to the work of others in the development of safety manuals and in promoting training in risk assessment for all carers (in the broadest sense).

PEOPLE'S PANEL GAS SAFETY STUDY

OVERALL RESULTS AND DETAILED ANALYSIS BY SELECTED POPULATION GROUPS

1 This note contains the results of a gas safety survey, carried out by MORI for HSE under the People's Panel initiative, established by the Government to enable a representative cross-section of the population to be consulted on matters affecting public services or policies. A total of 1003 people were asked 23 questions related to gas safety issues.

2 When interpreting the quantitative findings it is important to bear in mind that the results are based on a sample of a cross-section of, rather than the entire, population. Consequently results are subject to sampling tolerances, and not all differences between sub-groups of the population are statistically significant. These data are given for the useful insight they may provide, but need to be treated with caution for that reason: data for a number of sub-groups of the total population are interesting rather than statistically significant. Guidance on interpreting the statistical significance of the results is attached as an appendix to this note.

General population: replies to all survey questions

2 The findings are based on telephone interviews with 1003 panel members in April 1999:

Q1 Government role in domestic safety. 67% feel that the Government's role is to inform people of safety risks in the home, but not to force them to take precautions for their own safety, and 32% feel that the Government should force people to take precautions for their own safety.

Q2 Which three of these do you consider the greatest safety risk to you at home?

Using coal or oil as a fuel in the home	: 29%
Using gas in the home	: 58%
Using electricity in the home	: 48%
Fires, generally	: 52%
Fires caused by smokers' materials	: 58%
DIY activities	: 54%

Q3 You should be allowed to do your own DIY repairs on gas appliances in your home
90% disagree (70% strongly disagree) with the statement, whilst 8% agree (3% of them strongly agree).

Q4 The Government should do more to promote gas safety
81% agree (45% strongly agree), and 15% disagree (3% strongly).

Q5 Gas users should take greater responsibility for the safety of their gas appliances
91% agree (58% strongly agree), and 6% disagree (2% strongly).

Q6 Gas bills should be increased to pay for better safety standards
28% agree (7% strongly disagree), and 66% disagree (33% strongly)

Q7 The gas industry should do more to promote gas safety
87% agree (53% strongly agree), and 8% disagree (2% strongly)

Q8/9 Do you use gas in your home? If so, is that...?
81% say yes, 19% say no. 92% use piped natural gas, 4% LPG and 4% don't know.

Q10-13 Which of the following appliances do you have in your home?
Of those using gas, 83% have a central heating boiler, 64% a gas fire, 66% a gas cooker and 54% a gas water heater.

Q14 How often do you get each of them serviced ?
Most respondents say that they have most of their appliances serviced once a year or more often: those with a gas boiler are most likely to have it serviced (81%), slightly less with a gas water heater (74%), still less with a gas fire (64%) and considerably less with a gas cooker (29%). (NB: more detail is available on servicing data.)

Q15 As far as you know, did the service of your include a safety check ?
The majority of respondents thought that this was the case for all types of appliance - in the range 91% to 86% - with slightly more (91%) thinking this for gas fires and slightly less (86%) for cookers. Don't Knows ranged from 6% to 9% depending on the appliance.

Q16 Was the person who serviced the appliance CORGI registered or not?
88% thought yes, 2% no, and 9% did not know.

Q17 How satisfied or dissatisfied were you with how your appliance was serviced?
94% were satisfied (70% very satisfied), whilst only 2% were dissatisfied (1% very).

Q18 Why do you say dissatisfied?
Around one third of responses - of which there were only 18 in number - indicate a lack of competence or thoroughness (based on verbatim responses).

Q19 How well informed do you feel about how to use gas safely?
70% feel well informed (22% very well), whilst 31% feel they have only a limited amount of information or do not know much about it (16% in the latter category).

Q20 And who do you think should provide you with information on how to use gas safely ?
In descending order, 76% thought gas suppliers should provide them with information, 24% HSE, 23% CORGI, 23% the Government, 19% local authorities, 17% Consumers' Association, and 9% Citizens Advice Bureaux.

Q21 Do you have a smoke alarm?
84% say yes, 16% no or don't know.

Q22 Do you have a carbon monoxide alarm ?
12% say yes, 88% no or don't know.

Q23 Who would you contact first in the event of a gas leak or gas fumes ?
7% say Transco, 69% their gas supplier, with the remainder evenly spread between Police, Fire, Gas Board, Gas Consumers' Council and Don't Know.

Gender

3 Women were more likely than men (+7%) to think that Government should force people to take precautions for their own safety, and men were less likely (-5%) to think that Government should do more to promote gas safety. In all other cases there were no significant deviations based on gender.

Older people (65+ and 75+)

4 Compared with the total population, the 65 to 74 age group was less likely (-5%) to think that Government should force them to take precautions for their own safety; more likely (+11%) to think that using coal or oil is one of the greatest safety risks in the home; less likely (-7%) to think DIY activities constitute the greatest risk; more likely (+5%) to disagree that you should be allowed to do DIY repairs on your own gas appliances; more likely (+9%) to agree that gas bills should be increased to pay for better safety standards; less likely (-7%) to use gas; more likely, where they are gas users, (+5%) to have a central heating boiler and less likely (21% and 6% respectively) to have a gas fire or a gas cooker.

5 The 65-74 age group was more likely (+9%) to say that they get their boiler serviced once a year, but less likely (-6%) to say it is serviced more often; when these two results are aggregated there is no significant difference from the general population; they were more likely (+13%) to get gas fires and gas water heaters (+6%) serviced once a year; and more likely to think (+5%) that their service included a safety check; more likely (+5%) to say the person who did the servicing was CORGI registered - though the 75+ group was 8% less likely to know this; the 65-74 age group was less likely (-7%) to feel well informed about how to use gas safely, but the 75+ group was far more likely (+25%) to feel well informed. Both groups of older people were less likely (-6% and -13%) to think that Government should be giving them information on how to use gas safely.

Disabled people

6 Compared with the total population, disabled men were less likely (-12%) to think that Government should force people to take precautions for their own safety, but disabled women were more likely (+8%) to think so. Disabled women were more likely (+5%) to see coal and oil as the greatest risk in the home, and disabled men were less likely (-5%) to see gas as the greatest risk; disabled men and women were both more likely (+7%) to feel that fires caused by smokers' materials pose the greatest risk; disabled men were less likely (-17%) to think that the Government should do more to promote gas safety, whereas disabled women were more likely (+14%) to think that Government should do more. Both sub-groups were more likely (+6 and 7%) to think that gas users should take more responsibility for safety; and disabled women were less likely (-8%) to be against increasing gas bills to pay for better safety standards. Disabled men were less likely (-7%) to think that the gas industry should do more to promote gas safety, whereas disabled women were more likely (+8%) to think so. Disabled women were less likely (-10%) to use gas. Of those using gas, disabled men were less likely (-8%) to have a gas boiler and more likely (+11%) to have a gas fire; disabled women were less likely to have a fire (-7%) and a cooker (-8%).

7 Disabled men were more likely (+7%) to say that their boiler is serviced once a year, but when once a year and more often than once a year results are aggregated, both sub-groups are close to the general population figure (women slightly (4%) above it). Disabled men were more likely (+6%) to say that the person who did the servicing was CORGI registered; both disabled men and women were more likely (+5% and 6%) to feel satisfied with how the appliance was serviced. Disabled men were more likely (+7%) to feel well-informed about how to use gas safely; women were more likely (+6%) to think the Consumers' Association should provide them with information on how to use gas safely and also more

likely to feel this (+8%) about gas suppliers, and HSE (+5%); disabled men were more likely (+10%) to think that local authorities should provide such information. Disabled women were more likely (+8%) to have a smoke alarm. Disabled men were more likely (+5%) to contact Transco or (+7%) the police first in the event of a gas leak, and women were more likely (+9%) not to know who to contact first.

Ethnic origin

8 Black and Asian sub-groups were very small (28 people in total), and the confidence limits attached to the data are therefore very wide. Compared to the total population, both sub-groups were more likely (+32% and +44%) to feel that Government should force people to take precautions for their own safety; fires caused by smokers' materials were seen as the greatest risk in the home by Asian sub-group respondents (ASG) (+31%), who also were more likely to see gas (15% and electricity (28%) as the greatest risk. Black sub-group respondents (BSG) also saw gas and electricity as greater risks (+13% and +14% respectively), and fires in general as a lower risk (-25%), with fires caused by smokers' materials a greater risk (+9%). For both sub-groups DIY activities constituted a lower risk (-39% for ASG, indicating that only one person nominated this as the greatest risk). ASGs were less likely (-17%) to disagree that you should be allowed to do your own DIY on gas appliances in your home. All BSG and ASG respondents thought that Government should do more to promote gas safety. BSGs were more likely (+7%) to think that gas users should take more responsibility for safety of their gas appliances; both ASGs and BSGs were less likely to agree (-46% and -43% respectively that gas bills should be increased to pay for better safety standards; all ASG and BSG respondents thought that the gas industry should do more to promote gas safety. All 28 respondents use gas.

9 BSGs were more likely (+14%) to have their gas boiler serviced once a year or more often; BSGs were more likely (+15%) not to know if the person who did the servicing was CORGI registered or not, and to be less satisfied (-23%) with how their appliance was serviced. BSGs were more likely (+23%) to feel that they have limited information about or do not know much about gas safety, whereas ASGs were more likely (+19%) to feel fairly or very well informed. ASGs were less likely to expect information about gas safety from most sources (CAB, CA, gas suppliers, HSE, Government); BSGs were more likely (+16%) to think that Government should provide information, or that local authorities should do so (+27%), but less likely (-21%) to expect information from CORGI. ASGs were more likely (+18%) to contact a gas supplier first in the event of a gas leak, and BSGs were more likely (19%) to contact the police.

Tenure

10 Compared with the total population, owner occupiers (O/Os) were less likely (-8%) to think that Government should force people to take precautions for their own safety, but renters were more likely (+21%) to think this. Renters (RTs) were more likely (+18%) to see coal as the greatest risk to safety in the home, and less likely (-6%) to see gas or fires (-12%) as the greatest risks; they were more likely (+10%) to see fires caused by smokers' materials as the greatest risk. Renters in deprived areas (RDAs) were more likely (+29%) to consider coal or oil to be the greatest risk. O/Os were less likely (-5%) to regard coal as the greatest risk, and were more likely (+5%) to consider fires in general to be the greatest risk. RDAs were less likely (-9%) to disagree that you should be allowed to do DIY on gas appliances in your own home. O/Os were less likely to think that the Government should do more to promote gas safety, whilst RTs were more likely (+17%) to think this, and RDAs were very likely (+26%) to think this. RDAs were also more likely (+14%) to think that gas users should take more responsibility for safety. RTs and RDAs were more likely to agree (+12% and 11% respectively) that gas bills should be increased to pay for better safety standards, and that the gas industry should do more to promote gas safety (+6% and +10% respectively). RTs were less likely (-12%) to have a gas

central heating boiler, and less likely (-5%) to have a gas fire. RDAs were also less likely (-10%) to have a gas fire but more likely (+10%) to have a gas cooker.

11 Aggregating those whose heating boiler is serviced once a year or more often, RTs were more likely (+12%) to get their appliances serviced, whereas 100% of RDAs indicated that their boiler is serviced that frequently. O/Os were less likely (-7%) to get their gas cooker serviced, but RTs were more likely (+21%) to have this done, and RDAs even more likely (+32%). RTs were more likely (+7%) to think that their service included a safety check, and 99% of the RDA group thought that this was the case. RDAs were more likely (+6%) to say that the person who serviced the appliance was CORGI registered. RDAs were more likely (+17%) to feel that they have limited information about or don't know much about gas safety. RTs were more likely (+7%) to have a smoke alarm but less likely (-5%) to have a CO alarm. RDAs were more likely (+11%) to have a smoke alarm. RTs were less likely (-8%) to think that gas suppliers should provide them with information about using gas safely, and more likely (+6%) to think that HSE or the Government should do so, and more likely (+15%) to think that local authorities should do so. RDAs were more likely to think that a range of bodies should provide them with information (+6% CAB, +11% Consumers' Association, +22% CORGI, +23% HSE, +19% Government, +24% local authorities).

Scotland

12 Compared with the total population, Scottish respondents were more likely (+17%) to think that the Government should force people to take precautions for their own safety; more likely to see coal (+9%) or electricity (+11%) as the greatest risk in the home, and less likely (-9%) to consider fires caused by smokers' materials as the greatest risk. Scots were less likely (-19%) to disagree that you should be allowed to do DIY on your own gas appliances; more likely (+5%) to think that Government should do more to promote gas safety; more likely (+11%) to think that gas users should take greater responsibility for the safety of their appliances; less likely (-17%) not to agree that gas bills should be increased to pay for better safety standards. Scots were less likely (-12%) to use gas, and less likely to have most forms of appliance (-11% less central heating boilers, 6% less fires, 11% less cookers).

13 Scottish respondents were more likely (+10%) to say that they have their gas boiler serviced more often than once a year, giving an aggregate total of 88% having it done once a year or more often (Scotland and Wales were the highest regions for regular servicing); they were less likely (-6%) to say that the person who did the servicing was CORGI registered, and more likely (+5%) not to know their status; more likely (+6%) to be very/fairly satisfied with their service; more likely (+7%) to think that they do not know much about gas safety; more likely (+12%) to think that CORGI should provide them with information about gas safety, or that HSE should do so (+9%); less likely (-5%) to have either a smoke or carbon monoxide alarm; more likely (+5%) to contact a gas supplier in the event of a leak, less likely (-5%) to contact Transco (only 16-24 year old women, 55-64 year old women and those on very low incomes were as little disposed to contact Transco as the Scots) and more likely (+6%) to contact the fire brigade.

Wales

14 Compared with the total population, Welsh respondents were less likely (-5%) to think that Government should force people to take precautions for their own safety, less likely (-7%) to consider fires from smokers' materials the greatest risk in the home and more likely (+8%) to consider DIY the greatest risk. Welsh respondents were more likely (+5%) to think that the gas industry should do more to promote gas safety; less likely (-8%) to have a gas cooker and more likely (+5%) to have a gas water heater; more likely to say (+9%) that their gas boiler or water heater is serviced more often than once a year (Wales and Scotland were on this basis the highest regions for

regular servicing); more likely (+7%) to say that the person servicing the appliance was CORGI registered; less likely to feel very (-5%) or fairly (-5%) well informed about gas safety, and more likely (+9%) to say that they have limited information/do not know much about gas safety; more likely (+7%) to think that CORGI should provide them with information on gas, and less likely (-8%) to think that suppliers should do so.

Household income

Note: This section compares the responses of very low income households (VLIH) with an income of £6500 or less, average to low income households (ALIH) with an income below £15,500, and higher income households (HIH) with an income of £35,000 or more.

15 Compared with the total population, VLIH were more likely (+9%) to think that Government should force people to take precautions for their own safety but HIH were less likely (-6%) to favour compulsion. VLIH were more likely (+17%) to consider using coal and oil as the greatest risk in the home; less likely to consider gas (-11%) or electricity (-7%) the greatest risk; less likely (-13%) to consider that fires generally pose the greatest risk, but more likely to consider fires caused by smokers' materials (+8%) and DIY (+7%) as the greatest risks. ALIH were more likely (+7%) to consider gas the greatest risk and less likely (-5%) to consider DIY as the greatest risks. HIH were less likely (-5%) to think of gas as the greatest risk, more likely (+8%) to consider that fires generally posed the greatest risk and less likely (-9%) to consider fires caused by smokers' materials the greatest risk.

16 HIH were less likely (-6%) to agree that Government should do more to promote gas safety, whereas LIH were more likely (+8%) to think this. VLIH were more likely (+5%) to disagree that the Government should do more. VLIH were more likely (+14%) and ALIH more likely (+11%) to think that gas bills should be increased to pay for better safety standards, but HIH were less likely (-6%) to think this. ALIH were less likely (-7%) to use gas. VLIH were less likely (-16%) to have a gas central heating boiler or (-12%) a water heater; ALIH were less likely (-5%) to have a water heater.

17 VLIH were less likely (-7%) to say that their boiler was serviced more often than once a year but more likely (+9%) to say that it was serviced once a year; ALIH were also more likely (+11%) to say that it was serviced once a year; by contrast, HIH were more likely (+8%) to say that their boiler was serviced less often than once a year (a higher proportion than 16-34 year old women, the other highest 'less often' respondents).

18 VLIH were more likely (+8%) to feel very well-informed about gas safety, but also less likely (-11%) to feel fairly well-informed; HIH were more likely (+5%) to feel very/fairly well informed (aggregated); ALIH were more likely (+5%) to think that the Consumers' Association should provide them with information about gas; gas suppliers as a source of information were nominated less (-11%) by VLIH respondents and more (+5%) by HIH; ALIH were more likely (+10%) to mention HSE and VLIH were more likely to mention their local authority. VLIH were less likely (-5%) to contact Transco in the event of a gas leak or fumes: only 2% of VLIH would contact Transco (only 16-24 and 55-64 year old women and Scottish respondents were as little disposed to contact Transco). VLIH were more likely (+6%) to contact 'Other', unspecified (only the over 75's were as greatly disposed to contact 'Other').

Statistical reliability

The confidence with which we can predict the variation between the sample results and the “true” values (for the total population) depends on the size of the sample and the number of times that a particular answer is given. This is usually chosen to be 95% - that is, the chances are 95 in 100 that the true value will fall within a specified range. The table below illustrates the predicted ranges for different sample sizes and percentage results at the 95% confidence interval.

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%
	+	+	+
	-	-	-
100 interviews	6	9	10
500 interviews	3	4	4
1000 interviews	2	3	3
2500 interviews	1	2	2

With a sample of 2500, where 30% give a particular answer, the chances are 19 in 20 that the true value (which would have been obtained if the whole population were interviewed) will fall within the range of plus or minus 2 percentage points from the sample result.

When the results are compared between separate groups within a sample, different results may be obtained. The difference may be “real” or it may occur by chance (because not everyone in the population has been interviewed). To test if the difference is a real one - ie if it is “statistically significant”, we need to consider the size of the samples, the percentage giving a certain answer, and the degree of confidence chosen. Assuming a 95% confidence level, the differences between the two sample results must be greater than the values given in the table below:

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%
	+	+	+
	-	-	-
1003 interviews (total)	2	3	3
Men (436)	3	4	5
Women (567)	3	4	4
65-74 age group (114)	6	8	9
Disabled men (66)	7	11	12
Black sub-group (18)	14	21	23
Asian sub-group (10)	19	28	31
Owner-occupiers (796)	2	3	4
Renters (121)	5	8	9
Scotland (87)	6	10	11
Wales & West (121)	5	8	9

Very low income h'holds (109)	6	9	9
Average to low income (147)	5	7	8
Higher income (180)	4	7	7

This means that, for example, if Scottish respondents give an answer of 50% to a particular question, we know that 95 times out of 100, the true answer lies between 39% and 61%.

When comparing different sub-groups within the sample, different results may be obtained. The difference may be real, or it may occur by chance (because not everyone in the population has been interviewed). Relevant figures for selected sub-groups are as follows:

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%
	+	+	+
	-	-	-
Gender			
Men (436) and women (567)	4	6	6
Age			
Total sample and those 65-74	6	9	10
Total sample and those 75+	8	12	13
Disabled people			
Total sample and disabled men (66)	8	11	13
Total sample and disabled women (83)	7	10	11
Disabled men (66) and women (83)	10	15	16
Ethnic origin			
Total sample and black/asian resps (28)	11	17	19
Total sample and black respondents (18)	14	21	23
Total sample and asian respondents (10)	19	29	31
Black resps (18) and asian respondents (10)	23	35	39
Tenure			
Total sample and owner/occupiers (796)	3	4	5
Total sample and renters (121)	6	9	9
Total sample and renters in deprived areas (34)	10	16	17
Owner/occupiers (796) and renters (121)	6	9	10
Owner/occupiers (796) and renters in deprived areas (34)	10	16	17
Renters (121) and renters in deprived areas (34)	11	17	19

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%

	+	+	+
	-	-	-
Scotland			
Total sample and Scottish respondents (87)	7	10	11
Wales			
Total sample and Wales & West respondents (121)	6	9	9
Household income			
Total sample and VLIH (109)	6	9	10
Total sample and ALIH (147)	5	8	9
Total sample and HIH (180)	5	7	8
VLIH (109) and ALIH (147)	7	11	12
VLIH (109) and HIH (180)	7	11	12
ALIH (147) and HIH (180)	7	10	11

This means that, for example, if the total population gives an answer of 50% to a question, the answer given by those on Very Low Incomes must be at least ten percentage points different (ie below 40% or above 60%) in order to be statistically significant. If the answer given by VLIH is between 40% and 60% we cannot be sure that this is a real difference.



Report of flammable gas incidents

Explanatory notes

- This form should be used to report to HSE incidents that have arisen from the use of either natural gas or liquefied petroleum gas (LPG) and have caused fatal or major injuries* to gas consumers either through the acute symptoms of carbon monoxide poisoning or the effects of fires or explosions after gas escapes have occurred.

* Major injuries include any that have led to unconsciousness, or the need for hospitalisation for more than 24 hours.
- Form F2508G2 should be used to report gas appliances or installations that are regarded to be dangerous after examination or test, but have not actually led to deaths or major injuries.
- Form F2508 should be used to report any deaths or major injuries arising from the use of gas involving persons whilst at work.

Part A

About you and your organisation

- What is your full name?

- What is your job title?

- What is the name of your organisation?

- How can we contact you if we need more information about the incident?

Your telephone/fax number

Part B

About the incident

- What was the main cause of the incident?

- exposure (to carbon monoxide)?
- other exposure (eg to unburnt gas)?
- fire or explosion?

- Where did the incident happen?
Address and post code

- Did the incident happen in a building?

- no
- yes - what type of building?
- house
- flats (four storeys or less)
- flats (more than four storeys)
- bungalow
- maisonette
- other

What type of room?

- kitchen
- bathroom
- bedroom
- lounge
- dining room
- other room

4. When did the incident happen?

/ /

5. What is the name of the person living in the premises? (If they cannot be contacted, please give the name, address and telephone number of a relative or friend who can)

6. Were the premises rented?

yes no

If so, what is the name, address and telephone number of the landlord or their managing agent

7. How many people died?

How many suffered major injuries?

8. Please give details of the people who died or suffered major injuries

name

name

name

name

name

Part C

Summary of incident

Please give a summary of the incident. If possible include any know details of police involvement, hospitals to which affected persons have been sent, and the gas supplier for the premises.

Part D

Your signature

Signature

Date

Where to send the form

Please send the completed form to the HSE office nearest to where the incident occurred, or to your nearest HSE office if in any doubt about which office to send it to.

For official use

Client number

Location number

Event number

INV REP Y N

A Review of Arrangements for Ensuring Competence of Gas Installers and Promoting the Safe Installation, Maintenance and Use of Gas Appliances – Amey VECTRA Limited Executive Summary

Introduction

The Health and Safety Executive (HSE) contracted Amey VECTRA Limited, hereafter referred to as VECTRA, to perform a gas safety review. The objectives of this review were to perform an independent assessment of the effectiveness of arrangements under current health and safety legislation for securing the competence of gas installers and the promotion of health and safety in the installation, maintenance and use of gas systems and appliances. The contract also included the development of recommendations for future arrangements for achieving the requirements of safety legislation. This report documents the findings of that review and the subsequent recommendations that have been developed.

Background

The current arrangements for ensuring safe utilisation of non-industrial gas systems and appliances are enshrined in the Gas Safety (Installation and Use) Regulations 1998 (GSIUR). A major requirement of these regulations is that all gas installation companies shall be a member of a 'class of persons' approved by the Health and Safety Executive (HSE). Currently, the only body with such approval is the Council for Registered Gas Installers (CORGI) who operate a compulsory registration scheme for gas installation businesses in Great Britain.

The operation of this compulsory scheme is defined in criteria that are set for a limited period by HSE and which are periodically reviewed together with CORGI's performance as the statutory registration body. The criteria and CORGI were reviewed in 1995 and revised criteria were set for a three-year period from 1 January 1996 to 31 December 1998. These criteria are reproduced in Appendix A.

The revised criteria required CORGI to introduce a nationally accredited certification scheme for individual gas operatives and to maintain a database of certificated operatives. In addition, during the current approval period, the registration criteria for businesses were tightened such that all businesses now have to demonstrate that all their operatives are fully competent and certificated. The revised criteria also required CORGI to change to a risk-based inspection regime and to make substantial changes to the constitution.

Many changes have also occurred in the non-industrial gas market during the current approval period, mostly driven by the opening up of the market to competition and the changing roles of major players in the market, such as British Gas de-merging into BG

Purpose of Review

As part of the fundamental review, SPD contracted VECTRA to perform an independent review of the effectiveness of arrangements under current health and safety legislation for securing the competence of gas installers and the promotion of health and safety in the installation, maintenance and use of gas systems and appliances. Since CORGI is the sole body approved by the HSE under the current legislation, a significant part VECTRA's review has focused on the performance of CORGI in terms both of improvements in gas safety and of stakeholder perceptions.

Methodology of the Review

The review is based primarily on information obtained by consulting as many interested parties as could be accommodated within the time-scale and budget of the project. Hence, the major part of the review has involved field work in the form of:-

- w** consultations with key stakeholders, who have a concern for or involvement in gas safety,
- w** consultations with members of CORGI's senior management, administration and field staff,
- w** visits to see examples of work completed by registered and non-registered installers.

Consultations with key stakeholders and other parties

At the start of the review, a list of key stakeholders was drawn up, based primarily on membership of CORGI council. This list was discussed and agreed with SPD before letters inviting stakeholders to participate in the review were sent out. All stakeholders were given the option of having a formal meeting, although a written contribution was requested in preference from some organisations. In all, meetings were initially requested with 23 organisations and a further 37 organisations were invited to give a written contribution. At the end of the consultation phase, 25 meetings had been attended and written contributions had been received from 9 organisations.

Consultations with CORGI

A meeting was held at the start of the review with Bob Henry, CORGI Chief Executive at CORGI HQ in Basingstoke. The objective of this meeting was to receive information to provide a basis for the review of CORGI activities and the consultations with key stakeholders and other parties. A second meeting was held at Basingstoke with both senior management and HQ staff. The purpose of the meeting was to obtain a more detailed view of CORGI processes and to receive some initial response, and additional relevant information, to issues that were being raised during the consultations with key stakeholders. Three meetings involving CORGI Field staff were also attended.

Inspection of work performed by installers

A sample of inspections were observed in order to gain more information on the nature of the installation activities taking place, the problems that can be experienced, the necessity for and value of the inspection process, and to obtain feedback from the installers and consumers involved. The sample covered the following inspection activities:-

- w** monitoring inspections of two sole traders,
- w** a preliminary inspection of a larger installer (already registered for pipework installations) planning to undertake a new activity, i.e. meter installations,
- w** a complaints inspection relating to a non-registered installer, and
- w** a complaints investigation relating to a registered installer.

This covers all of the inspection types with the exception of a standard pre-registration assessment.

Conclusions

CORGI Organisation

The Board is answerable to the Council, referred to as the Principal Representative Body in the criteria. The Council is made up of a wide range of stakeholder organisations many of whom CORGI competes with in its activities outside those of registration and inspection. Without exception, members of Council who have been included in this review stated that they are not adequately consulted and are ignored when they make representations to CORGI.

The organisational changes that were introduced following the Touche Ross review of 1995, have concentrated power in the hands of the Executive Directors to such an extent that members of the Council do not feel that they have any involvement in decision-making. It was, however, felt that the management changes, which had taken place since this review, were a positive step.

With the exception of that relating to the Council, organisations generally considered that CORGI were meeting the criteria set by HSE.

It is worth noting that many organisations are still critical of the management style of CORGI, comparing it with old-style British Gas. It was considered to be impossible to get at, to be unreceptive, an ivory tower, remote.

As a consequence of the above comments, it was clear that most organisations did not have the respect for CORGI that would be appropriate for such a body.

CORGI Role

There was a widespread view that the role of CORGI was not sufficiently clear since, in addition to its role as a statutory registration body, including the monitoring and inspection of

competence in the installation sector, it also gives the appearance of a trade association and a consumer body.

CORGI also carries out commercial activities through a wholly owned subsidiary, CORGI Services Limited (CSL). Many organisations felt that this situation should be clarified and a number, whose own role or position was being affected, felt that CORGI activities should be reduced.

CORGI Operations

Registration

The improvements to the company IT systems to enable the registration of individual operatives, and to bring the computer and telephone systems up to date, have been widely welcomed.

The view was expressed by pressure groups that CORGI did not remove installers from the register even when clearly dangerous work had been carried out. There do not appear to be any criteria for removal for gas safety reasons, the removals are typically for 'technical' reasons.

The introduction of the operatives ID card is generally considered to have been very successful, despite some teething problems. However, the card may not make it sufficiently clear that it only refers to gas safety and the information on the reverse of the card may be confusing to the householder.

The annual registration fee does not appear to be excessive, considering the services provided and the high customer awareness of the scheme. Provided that non-registered activity is controlled, the current fee could be absorbed as an overhead with little impact on competitiveness and should not be an issue.

Inspection

The contact and free audit aspects of inspection were welcomed by many installers. In general, inspectors were well thought of, although there were some individual criticisms.

The advance notice given for monitoring inspections, and the selection of installations by the installer, was considered to be unhelpful in determining the adequacy of installations.

Many organisations felt that monitoring inspections could be phased out as operatives reached the ACS level of competence. However, it was considered that complaints inspections and investigations should continue. If routine inspections continue then a more random means of selection was favoured.

Technical Support

Many organisations thought that the service was helpful. However, a number of organisations felt that too many inquiries were just passed on to someone else (CORGI does not agree with this view).

Many comments were received concerning the difficulty of getting through by telephone, and some wanted the working hours of the service to be extended.

Demonstration of Competence (ACS Scheme)

Without exception, organisations considered that the way in which the training and certification of operatives was delivered under the previous 'ACoP' system was unsatisfactory and delivered an inconsistent result. In some cases, the competence certificate was considered to be no more than an attendance certificate.

The ACS was introduced at the request of HSE as part of the criteria in a very short space of time and to an exacting specification. Many organisations felt that this was a thankless task for CORGI. The ACS scheme was set up to be in accordance with EN 45013, to a blueprint given by HSE. CORGI fully met HSE's requirements but many consider that how they are being interpreted and implemented is often excessive.

The ACS Scheme, in order to operate to a nationally agreed standard, was developed through a Joint Standards Body (JSB) on which any interested body could be represented. In the event, more than thirty organisations were represented. The assessment criteria, which form the standard for certification, were developed by CORGI personnel with little consultation with the JSB and with limited opportunity for the JSB to comment before they were published.

Despite the many reservations over the ACS scheme, the competence level required, the independence of the assessment and the regular update elements are welcomed. Many organisations recognised that the scheme is in its infancy and many problems will be resolved as it develops.

The assessment of competence is a follow on from the training that an operative should have received and be updating on a regular basis. The ACS scheme is seen by many as an additional cost which will be borne by a reduction in profit. It is considered that this could lead to installers reducing the general training of gas operatives to specific training to pass the ACS modules.

The way in which the assessments are structured, including detailed sets of technical questions (mainly of open book format), is seen by smaller installers as not being 'the way that gas operatives work'. This 'back to school' element is a deterrent which will persuade many experienced operatives to drop out (retire or move into other trades) when the time comes for them to obtain ACS certification.

The requirement of ACS certification is claimed to be a deterrent to new entrants to the industry who would undertake an apprenticeship leading to NVQ qualifications. In trades other than gas, the NVQ would be a licence to operate. For the gas industry, it would not since the ACS would be an additional requirement. The NVQ approach is the preferred government model for training and attracts government funds. Many installers and other organisations felt that the ACS requirement and hence competence level could be built in to the NVQ training route for new entrants.

A further problem with the ACS scheme as currently envisaged is the requirement to repeat the whole process after five years. This is considered by installers to be an additional burden and to be unnecessary for operatives who have been active in the intervening period, a form of update assessment would be considered more appropriate.

Recommendations

The HSE and Government should provide a clear definition of CORGI's role

Currently, the role of CORGI is unclear to many stakeholders. The HSE and Government should provide a clear indication of what it sees as CORGI's role in contributing to the arrangements to ensure safe gas work. A steer on the appropriate emphasis on the apparently conflicting roles of statutory body and commercial activities should be given. In addition, the effectiveness of CORGI in the role of a consumer protection organisation should be questioned, in view of the scope of the GSIUR which only cover safety issues.

The terms of the approval should be changed to provide CORGI with more stability

Under the present terms of the approval, with renewal carried out on a three yearly basis, it is difficult for an organisation that is solely dependent on the approved activities to formulate a business strategy for the future. This is one reason why we believe CORGI have been developing commercial activities through CSL, apart from the technical requirement to have a separate company for registration of CORGI inspectors. It should be possible to provide CORGI with more stability by changing the terms of the approval so that renewal is based on a rolling annual approval for a period of three to five years. This arrangement would have two benefits. Firstly, it would provide CORGI with the necessary stability to focus more on the approved activities, with less emphasis placed on commercial activities which some organisations feel are incompatible with CORGI's core function. Secondly, if the HSE at any time decided not to renew CORGI's approval, there would be a substantial period of time for any potential bidder for approval to put systems in place to take over operation of the register and associated activities. This would be a better arrangement to facilitate the possible transfer of approval to another organisation if it was felt necessary.

The CORGI Board should be more accountable to the CORGI Council

It is recognised that there are many conflicting views represented on the CORGI Council and that, as a result of the previous review, the involvement of the Council was reduced. However, the current situation is unsatisfactory where the majority of Council members feel that they have no involvement at all. It is recommended that a Steering Group be set up, with representation from all the various types of organisation on the council, to channel and manage the consultation process. The proposed structure of this Steering Group is illustrated in Figure 1. Each type of organisation referred to in the list of Council members, that is:-

- w** Gas Suppliers,
- w** Professional Institutions,
- w** Training Organisations,
- w** Employees' Organisations,
- w** Employers Trade Associations and
- w** Consumer Organisations,

would nominate a representative to sit on the Steering Group which would be independently chaired, possibly by one of the non-executive CORGI Directors. HSE and the Industry Umbrella Organisation for Gas Safety (VIGIL or its successor) would have observer status on the group. The scope of the Steering Group would only include the regulated activities performed by CORGI, as defined in the criteria set by HSE and, hence, encompassed by the registration fee paid by installers. The HSE representative would clarify any issues raised concerning interpretation of these criteria. (One of the benefits of the Steering Group would be an increased awareness by members of the Council of the criteria, and of the roles of CORGI and HSE).

It is envisaged that the Steering Group would meet quarterly, when CORGI would report on the regulated activities against key performance indicators (KPIs), the setting of which are already a requirement of the current criteria. These KPIs will need to be reviewed by the Steering Group, although all measurable performance targets should still be agreed between HSE and CORGI. In particular, financial performance indicators should be completely transparent, so that the Steering Group can clearly identify which activities are funded via the registration fees. It should be the responsibility of CORGI to show that any activity it considers to be beyond the scope of the Steering Group is self-financing). Once they have been agreed, CORGI could perform self-assessment of its performance against the KPIs, with the Steering Group providing an independent review and audit. It should be the responsibility of the Council representatives sitting on the Steering Group to disseminate information to all Council members and to ensure that Council's views are represented in the group.

Consumers should be made aware of the limitations of the competencies ensured CORGI membership

The consumer bodies were concerned that the general public perceived CORGI as a consumer organisation covering all aspects of the competencies of gas work. Since CORGI membership only ensures competence related to gas safety, the consumer can be disappointed when issues concerning appliance functionality and business practices are raised. The consumer should be made aware of the limitations of the CORGI scheme and of the requirement to check the reputation and competence of the installer in other aspects of the work to be performed.

The ACS scheme should be adapted to be more generic with the introduction of shorter re-assessments for operatives who are active in the field. The issue of how the ACS assessment can be accommodated within NVQs should be agreed with the relevant industries.

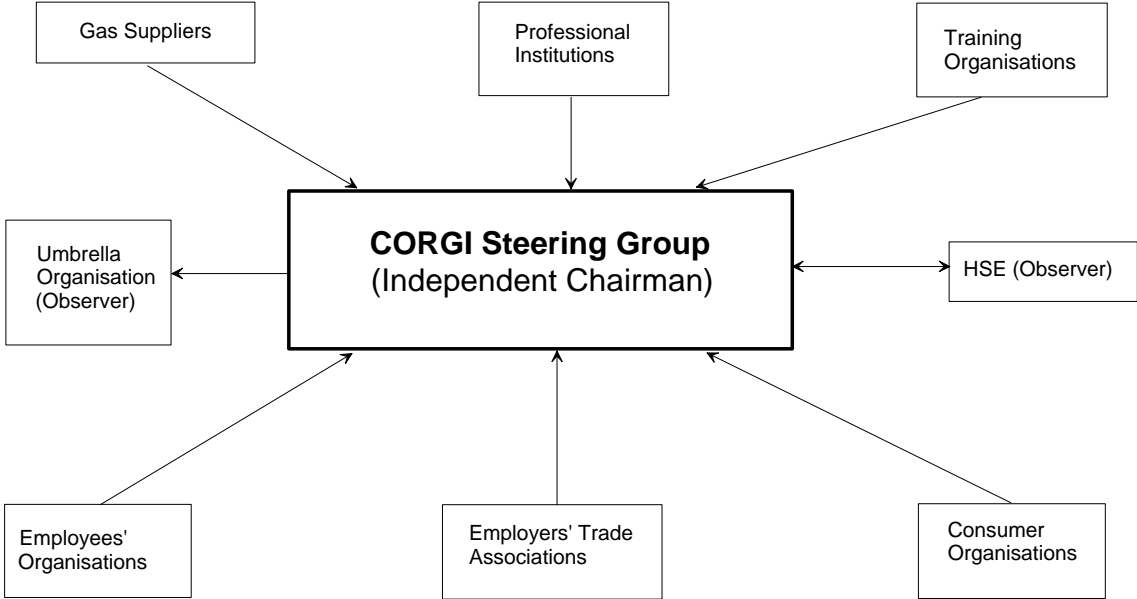
Although the ACS scheme is currently evolving it is already recognised as being too detailed, prescriptive and expensive. The scheme would be more adaptable if the assessment criteria were defined for general job descriptions instead of the present arrangement with many modules for various appliance types. An assessment scheme based on general job descriptions would provide more rounded gas operatives who would be more likely to detect safety critical faults in the field.

The assessments are perceived as being too detailed and the 100% pass mark is causing concern in the industry. A simplified assessment could still comply with EN45013, providing a less expensive scheme that was less intimidating to the mature operative.

The guidance to EN45013 also implied that fully-certified operatives working in the field could undergo shorter periodic re-assessment, following an initial full assessment. The adoption of this approach would significantly reduce the cost of the ACS scheme over the career of a practising operative.

There is also a need for the industry to agree how to incorporate the objectives of the ACS scheme into NVQs without discouraging new blood coming into the industry.

Figure 1: Structure of CORGI Steering Group



ADDITIONAL SUGGESTIONS FOR ‘GOAL-SETTING’ AND SIMPLIFICATION OF THE REGULATIONS

The following changes have been suggested to simplify and introduce a more ‘goal-setting’ approach into the Regulations. It must be stressed that these are only initial broad suggestions and that legal opinion would be necessary on whether any particular change could finally be made to the Regulations. Where removal of a particular regulation is proposed, it is intended that the specifics of that provision would be covered in the ACoP/guidance.

Regulation 5 Materials and workmanship

Delete regulation 5(2). The detailed prohibitions/restrictions on installation of lead and non-metallic pipework are effectively covered by the general requirements in regulation 5(1) for any gas fitting installed to be of good construction and sound material, of adequate strength and size to secure safety and of appropriate type for the gas to be used.

Regulation 5(3). Suggestions for a ‘goal-setting’ approach broadly based on this regulation (which, inter alia, requires any work in relation to a gas fitting to be carried out in accordance with ‘appropriate standards’) are discussed in paragraph 232 of the report.

Regulation 6 General safety precautions

- (a) Replace regulation 6(1)-(6), which imposes detailed requirements against dangers in respect of gas release and when searching for gas leaks, by more general provisions requiring any person:
 - (i) carrying out work in relation to a gas fitting (including installation) to ensure the fitting is left so that it can be operated safely or is otherwise safe; and
 - (ii) searching for a gas leak to do so in a manner which does not constitute a danger to any person.
- (b) Delete regulation 6(8)(a). This provision, which prohibits the installation of a gas storage vessel in a basement or cellar, is effectively covered by regulation 6(7) which requires any such vessel to be installed in a position where it can be used, filled or refilled without causing a danger to any person.
- (c) Delete regulation 6(8)(b). The general objective of this provision, which prohibits the installation of certain LPG gas appliances in a basement or cellar, could be covered by the ‘goal-setting’ provision based on the proposal in (a)(i) above.
- (d) As an alternative to (a)-(c) above, it has been suggested that the whole of regulation 6 (apart from 6(5) (leak detection) and 6(10) (prohibiting storage of compressed natural gas at domestic premises) could be replaced by a general provision along the following lines that no person shall:
 - (a) install (or carry out any other work) in relation to a gas fitting or gas storage vessel;
 - (b) leave it unattended, or;
 - (c) later interfere with it,
 in such a way as to constitute a danger to any person.

In this context, 'no person' would refer to any person, including both the installer and anyone else who could be affected, either during the work, acts of interference or afterwards.

Regulation 7 Protection against damage

- (a) Delete regulation 7(3). This regulation, which requires protection of gas fittings against corrosion damage, is effectively covered by regulation 7(1) which deals with protection against damage generally.
- (b) Delete regulation 7(2). This regulation addresses the risks of blockage, and interference in safe operation in gas fittings from foreign matter (e.g. dust). The objective could be met by extending regulation 7(1), which covers protection against damage, also to require protection against blockage/interference.
- (c) Delete regulation 7. As an alternative to (a)-(b) above, the whole of regulation 7 could be seen as unnecessary, in that these detailed provisions are subsumed by the general requirements for adequacy/suitability of gas fittings in regulation 5(1), or the recast version of regulation 6 as in item (d) under that regulation - see earlier.

Regulation 9 Emergency controls

- (a) Replace regulations 9(2)-(4). These provisions impose detailed requirements for secure attachment of a key, lever or hand-wheel to an emergency control and display of notices on the operation and location of controls. These objectives could be met by a general provision along the lines of requiring any person who installs an emergency control to ensure that it can be operated safely at all times and displays the necessary instructions on how to operate the control.

It has been argued that the above provision might be incorporated into regulation 9(1), however, the distinct duty on the gas supplier to provide the emergency control in the first place would need to be retained.

- (b) Relocate regulation 9(5) which effectively defines application of emergency control requirements for LPG installations in a separate regulation dealing with those requirements specific to such installations.

Regulation 12 Meters - general provisions

- (a) Combine regulations 12(1) and (2). These regulations have related objectives of (a) locating meters to avoid affecting means of escape in event of a fire and (b) meter construction to avoid hazardous escape of gas in event of a fire. These objectives could be combined in one regulation along the lines of requiring no person to install a meter in any premises unless:

- (i) the site where it is to be installed is such, and
- (ii) the meter is of a sound construction, adequate

to ensure so far as is reasonably practicable that in the event of fire the means of escape from the premises is not adversely affected and gas is not able to escape in hazardous quantities.

The existing exclusion for non-domestic premises where there is a readily accessible service valve is argued by some as being irrelevant because the above requirements should apply to all premises.

- (b) Delete regulation 12(3). This regulation requires a meter to be installed in a position where there is no risk of damage from electrical apparatus. This could be covered by the goal-setting requirement based on regulation 7(1) for protection of gas fittings generally (i.e. including meters) - see earlier.
- (c) Delete regulation 12(5). This regulation imposes restrictions on rigid pipe connections to meters in specified situations, e.g. to avoid strain/damage to solder-jointed side pipes. This provision is broadly covered by regulation 5(1), which requires suitable gas fittings to be of suitable construction (see earlier).
- (d) Delete regulation 12(6). This regulation, which covers gas soundness testing and purging of meters after installation, could be covered by a general provision for gas tightness testing of gas fitting (i.e. as in regulation 6(1)), extended also to cover purging requirements.
- (e) As an alternative to (a)-(d), replace regulation 12 and 13, by a general provision on meters, requiring safe/secure installation and siting (including housing). It has been argued that there is a strong case for a broad 'goal setting' provision here, given that regulations 12 and 13 are seldom, if ever, invoked, eg in enforcement action.

Regulation 13 Meter housings

Replace regulation 13(3) and (4), which concern the provision of a key where a meter is located in a lockable meter box or compound, by a general requirement for meters to be readily accessible to the gas consumer at all times. This could possibly be included in regulation 12(1) which also deals with location of meters. See also item (e) under regulation 12.

Regulation 14 Regulators

- (a) Replace regulation 14(1)-(7), which prescribe detailed and specific requirements for regulators and under/overpressure protection of gas installations, by a general 'goal-setting' regulation defining the broad safety objective. This might be expressed along the lines that no person should supply gas other than at a pressure which avoids any risk of overpressurising the system and ensures safe operation of all gas fittings (i.e. including any gas appliances).
- (b) Move requirements of regulation 14 in respect of gas storage (i.e. LPG) installations into a separate regulation or part of the Regulations dealing with all matters specific to such installations (see also comment (b) under regulation 9).

Regulation 16 Primary meters

- (a) Delete regulation 16(1). This regulation, which prohibits the installation of a prepayment meter as a primary meter which serves a secondary meter, is concerned with the risk from loss of gas supply when money runs out (and potential for release of unburned gas if gas appliances are not isolated, when the gas supply is subsequently resumed). The general objective is related to regulation 14 and could possibly be covered by a goal-setting provision, see comment (a) under that regulation.
- (b) Replace/relocate regulation 16(2). This provision concerns the need to display a notice where a service pipe or service pipework serves more than one primary meter. It would seem appropriate to relocate this in regulation 15 which also covers meter notices.
- (c) Delete regulation 16(3). This regulation, which covers detailed measures to prevent gas escape where a primary meter is removed and not immediately replaced, is effectively covered by the

general provisions for making safe/preventing gas escape in regulation 6 (see earlier). Some have argued that regulation 16(3) might be a matter more for the Pipelines Safety Regulations .

Regulation 18 Safe use of pipes

It has been argued that regulation 18(2), which deals with notification of the need to provide equipotential bonding (i.e. to deal with the electric shock risk) should be removed from GS(IU)R. Alternatively it has been suggested that this requirement could be covered under a general provision on safe installation and related matters (see earlier comments in relation to regulation 5(3)).

Regulation 19 Enclosed pipes

Delete regulation 19. This regulation specifies detailed requirements to avoid damage to pipework passing through walls and other structures, and to minimise the risk from a release of gas in these circumstances (e.g. entering a cavity wall). It has been argued that these objectives are mainly covered by the general provisions of regulation 18(1) which requires safe positioning of pipework in regard to features such as parts of the structure of premises and other building services which might affect the safe use of the pipework; these general provisions could be extended as necessary to address all of the aims of regulation 18.

Regulation 20

It has been argued that this provision (concerning the need to install installation pipework in a manner which does not impair the structure or fire resistance of a building) is more a matter for Building Regulations, and should be removed from GSIUR.

Regulation 21 Clogging precautions

Delete this regulation. This provision, which deals with measures for safe collection and removal of any liquid or solid matter in gas, could be covered by extension of regulation 7(1), which addresses related risks of corrosion and other damage; or alternatively under a general provision for safe installation and related matters (see earlier comments on regulations 5(3) and 6 (items (a) and (d))).

Regulation 22 Testing and purging of pipes

- (a) Delete regulation. It has been argued that the detailed requirements in this regulation, i.e. on gas tightness testing, protective coatings and purging/capping of installation pipework could be effectively covered by a general provision based on regulation 6, as earlier suggested in item (a) under that regulation, extended as necessary, i.e. to cover application of any protective coating. However, others have argued that it is important to maintain the approach in regulation 22 of allocating specific responsibilities in particular circumstances, i.e. according to whether or not gas is being supplied to premises.
- (b) As an alternative, it has been suggested that regulation 22 might be combined with regulation 33 (testing of appliances) because these regulations deal with similar matters, through different perspectives, i.e. all work (including on existing installations) and that specifically relating to (principally new) installation work, respectively.

Regulation 24 Large consumers

- (a) This regulation imposes a very detailed and prescriptive requirement for a notice of the gas configuration in the case of large systems, and even refers to specific pipework diameters in terms of the application of this requirement, and details to be recorded. It has been suggested that this provision (presumably based on earlier custom and practice in the industry) should be updated, and subsumed into general requirements related to installation pipework, i.e. leaving detailed information to the ACoP.
- (b) If retained, It has been suggested that regulation 24 could be simplified and placed with regulation 17(1), which makes a similar provision (i.e. for a notice) where gas is supplied to a secondary meter.

Regulation 26 Gas appliances - safety precautions

It has been suggested that the general 'goal-setting' provisions in regulation 26(1) could be extended to cover objectives of all or most of the other detailed provisions in regulation 26(2)-(10), e.g. concerning safety examination/tests, compliance with other safety enactments etc. It has been proposed that a wording could be used along the lines that any person carrying out work in relation to a gas appliance shall ensure that that the appliance can be used without constituting a danger to any person or it is otherwise safe. However, it has been pointed out that, if this were done, provision would need to be made in regulation 36 (Landlords duties), regarding the points which need to be addressed as a minimum in the annual safety check (regulation 36(9) currently refers to matters specified in regulation 26(9)).

Regulation 27 Flues

Delete regulations 27(2)-(5). These provisions cover detailed requirements for flue pipes entering chimneys, sealing of enclosures surrounding flues, interlocking of power-operated flues and safe location of flues. It has been suggested that these could be consolidated into a general provision based on regulation 27(1) which requires any flue installed to a gas appliance to be suitable and in a proper condition for safe operation of the appliance.

Regulation 31 Suspended appliances

Delete regulation. This provision, which deals with suitability and installation of suspended appliances, could be covered by a general requirement based on regulation 26(1) for safe installation of gas appliances (see earlier).

Regulation 32 Flue dampers

Delete whole regulation. These provisions, which detail requirements for safety of automatic flue dampers, and impose prohibitions/restrictions in relation to manually operated dampers for flues serving domestic appliances, are covered by the general requirements for flue safety in regulation 27(1) - see earlier.

Regulation 33 Testing of appliances

Delete regulation 33(1)-(2). It has been argued that the detailed requirements in this regulation for appliance testing/examination and, where necessary, adjustments/disconnection, could be covered by the broader objectives in regulation 26, for ensuring safe installation of a gas appliance (see earlier). It has also been suggested that the associated requirements in regulations 33(3), e.g. concerning checks to be made by persons permitting gas to be passed into appliances and by gas suppliers, might also be replaced by a more 'goal-setting' provision, however, others have argued that the current prescriptive

approach is necessary to ensure that separate responsibilities are clearly identified in these circumstances.

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Level of Response	Question 7 - Is the level of resource expended by HSE on enforcing the Regulations appropriate or is some other level appropriate? Is current spending on publicity adequate? If not, how much more should be spent?	29
Emergency Service Providers	Question 8 - What are the views on the current role and level of response provided by Emergency Service Providers? If changes should be made give details?	24
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	Question 15 - What are the views on the CORGI Council's role? Should it have greater involvement in policy and strategic planning?	36
	Question 16 - If the accountability of the CORGI Board to the Council should be increased, how might this be effected?	36
	Question 17 - What are views on the creation of a Steering Group, comprising representatives of the main interest groups on the CORGI Council, to mediate between Council and CORGI Board?	36
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	Question 27 - What are the views on the relationship between the ACS and existing vocational qualifications such as S/NVQs? Is there excessive duplication, and if so how can the systems be dovetailed more effectively?	45
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	Question 38 - Should insurance companies and building societies provide incentives for ensuring gas equipment is properly maintained and checked for safety through conditions of house insurance and mortgages? Should more publicity be given to the importance of ensuring maintenance and safety checks are carried out?	58
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	premises only, or (iii) domestic premises only (iv) rented residential accommodation covered by existing landlords' duties or (v) a combination of premises?	
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	Question 41 - What are your views on the need for (a) more proactive inspection and enforcement in rented accommodation (b) simplification of legal requirements on landlords (c) further action to target gas safety publicity on landlords (d) more guidance to be given to landlords (e) removing liability of landlords in respect to work done by gas installers (f) a legal provision to ensure access can be gained to tenants' accommodation in order to carry out landlords' maintenance/ safety check duties?	65
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	Question 47 - If CO alarms should be legally required, do you feel this should apply to (a) all domestic premises (b) all rented accommodation (c) houses in multiple occupation (d) homes of elderly, sick or disabled persons (e) other places?	70
	Question 48 - Should a requirement for CO alarms be introduced by placing (a) a specific duty on gas consumers (b) a control on gas suppliers which makes supply of gas conditional on the fitting of alarms?	70
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Flue Gas Analysers	Question 50 - Should (a) Emergency Service Providers and/or (b) gas installers be equipped with flue gas analysers?	73
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Safety checks in house transactions	Question 43 - Should a legal requirement be introduced to require (a) gas equipment in owner-occupied properties to be checked for safety (b) any faulty equipment to be made safe or repaired, before property is sold?	67
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	Question 44 - Should responsibility for ensuring a safety check is carried out be placed on (a) the property vendor (b) the estate agent (c) someone else?	67
	Question 45 - Should solicitors involved in house transactions be required to make reasonable enquiries to obtain proof of safety of gas equipment in property to be sold?	67

Gas work in non-domestic premises	Question 52 - Should the following be excluded (a) all gas work in the 'commercial' sectors from the Regulations (b) gas work in the 'commercial sector from the need for registration?	77
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Work on 'industrial' scale plant in commercial premises	Question 54 - Should industrial plant in commercial premises be excluded from (a) the ACS competence scheme (b) the requirement for registration under GS(IU)R where the work is done by equipment manufacturer or a person trained to do the work?	81
	Question 55 - Should a relaxation in competence assessment requirements be achieved by (a) a legal exclusion clause in GS(IU)R relying on industrial standards/practice for defining training/competence requirements (b) a provision in an ACoP to allow competence to be demonstrated in the way proposed i.e. through training/assessment by the equipment manufacturer (c) a legal exclusion clause in the new Regulations with a new ACoP on standards of training/competence in work on industrial plant?	81
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Boats and Caravans	Question 60 - Should the current scope of the Regulations be extended to cover all caravans and inland waterway boats?	86
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	from the Regulations for those boats subject to a boat safety scheme operated by a navigation authority? If boats should be excluded in some way, which of the provision of the Regulations should be disappplied?	
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Goal-setting and simplification of the Regulations	Question 64 - Should detailed and prescriptive approach to GS(IU)R be retained for (a) the domestic sector (b) the non-domestic sector (c) both sectors?	92
	Question 65 - Should a more goal-setting approach be adopted for certain provisions while retaining prescription for others?	92
	Question 66 - If limited goal-setting is introduced should this apply to (a) the domestic sector (b) the non-domestic sector (c) both sectors?	92
	Question 67 - What are views on the proposal for introducing a 'safety plan' regime for large-scale gas work carried out during building construction?	92
	Question 69 - Are there any other suggestions for simplifying the Regulations or replacing particular regulations with goal-setting provisions?	93
	Question 75 - Is there a need for further action to clarify and provide further information on interfaces between GS(IU)R and related controls?	99
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'Gas appliance' and 'gas fitting'	Question 70 - Should the existing definitions of 'gas appliance' and 'gas fitting' be amended in any way?	93
	Question 71 - Should the requirements of GS(IU)R in regard to flues be changed i.e., to bring any work on a flue/chimney within the scope of competence requirements?	93

VALUATION OF SAFETY BENEFIT AND BROAD ESTIMATES OF COSTS

Use of valuation

When assessing the risks of future fatalities, HSEs approach has been to apply the Department of Environment, Transport and the Regions (DETR) value of risk reduction, which is *equivalent to a* “value of a statistical life (VoSL)” of £1,060,000 (uprating the current figure to June 2000 values). This is not the value of compensating a named individual for the future certainty of a ‘premature’ death. It is an estimate of the average value that individuals would pay to gain a very small reduction in the chance of a premature death.

Table 1 in the main document indicates that we would expect around forty fatalities each year from fire, explosion or carbon monoxide poisoning. We can therefore calculate the total value of preventing *all* the expected future fatalities from carbon monoxide poisoning. This would be equivalent to 40 * £1.06 million, ie £42.5 million on a yearly basis.

It should be recognised that HSC, and DETR ministers, have never endorsed any particular value of reducing risk. However, the use of a particular value as a reference figure does enable HSC to ensure consistency in its approach across different sectors. If one sector is incurring costs for each fatality reduced which are far in excess of the DETR reference figure, then a case would have to be made as to why we are particularly concerned about risk in this area.

Note on cost estimates

It must be stressed that the figures quoted below are very broad approximations and must be treated with considerable caution. They are only intended to give a rough indication of the order of magnitude of costs for some of the main cost-related provisions under the current regime and of options put forward by key stakeholders in the Review. A full Cost Benefit Assessment will be undertaken at a later stage, i.e. when final proposals for the way ahead are drawn up.

EXAMPLES OF PRINCIPAL EXISTING COSTS

Legislative controls

REQUIREMENT	AVERAGE ANNUAL COST (£million)
competence assessment under ACS - cost to industry	40.8
registration of gas installation businesses - cost to industry	9.2
landlords safety check	340 - 680
HSE inspector costs	2

Publicity

PROVISION	AVERAGE ANNUAL COST (£million)
annual campaign	0.1
gas safety adviceline	0.02-0.03

EXAMPLES OF COSTS OF OPTIONS PUT FORWARD

OPTION	APPROX. COST (£million)
annual safety check for private 'owner-occupied' properties.	660 - 1320/year
annual service plus safety check for private 'owner-occupied' properties	1,056 - 1980/year
carbon monoxide alarm (initial cost): (a) private 'owner-occupied' homes (b) rented property	462 238
flue gas analyser: (a) one per registered installer (b) one per gas operative	22 (initial) plus 2.2 - 4.4 (annual servicing) 51 (initial) plus 5.1 - 10.2 (annual servicing)
gas safety check in house transactions	100-200/year

Assumptions

- (a) There are currently 44, 000 registered installers employing around 102, 000 operatives.
- (b) 102, 000 operatives will require re-certification over a five year period (ie average 21, 000/yr) at a typical cost of £2000 per operative. Only cost directly connected with assessment is specified, eg training costs etc are excluded.

- (c) Total number of 'households' using gas is 20 m.
- (d) 34% of housing stock is rented and therefore the number of rented domestic premises using gas is 6.8 m. 66% of housing stock is private owner-occupied property, giving a total of these using gas of 13.2 m.
- (e) Cost of safety check and combined safety check/service is £50 - 100 and £80 - 150 per appliance, respectively. Costs of checks/servicing are based on one appliance per property.
- (f) Typical cost of CO alarm is £35.
- (g) Typical cost of flue gas analyser is £500, and annual service charge for this equipment is £50-100.
- (h) Cost for safety checks in house transactions is based on 2 million safety checks per year (estimate of workload by Vectra, ie assuming requirement is not applied to property less than 5 years old or where a safety check has already been performed within one year prior to the sale of premises).
- (i) HSE inspector cost based on 35 inspector years/annum, at overall cost of £333 per inspector day.

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

ACoP	Approved Code of Practice
ACS	Accredited Certification Scheme
ANEC	Association of Consumer Representation in Standardisation
ATG	Association Technique de Gaz
BG	British Gas
BSG	Business Strategy Group
BGT	British Gas Technology
CDM	Construction (Design and Management) Regulations
CO	Carbon monoxide
CORGI	The Council for Registered Gas Installers
DETR	Department of the Environment, Transport and the Regions
DTI	Department of Trade and Industry
ECA	Electrical Contractors Association
ESP	Emergency Service Providers
EU	European Union
FGA	Flue Gas Analysis
FOD	Field Operations Directorate
GS(IU)R	Gas Safety (Installation and Use) Regulations
GSMR	Gas Safety (Management) Regulations
HETAS	Heating Equipment Testing and Approval Scheme
HMOs	Houses in Multiple Occupation
HSC	Health and Safety Commission
HSE	Health and Safety Executive
HSEAR	Health and Safety (Enforcing Authority) Regulations

HSWA	Health and Safety at Work etc Act
JIP	Joint Industry Project
JSB	Joint Standards Body
LA	Local Authority
MHSWR	Management of Health and Safety at Work Regulations 1992
NICEIC	National Inspection Council for Electrical Installation Contracting
OFGEM	Office of Gas and Electricity Markets
PSR	Pipelines Safety Regulations 1996
PSTGCR	Pressure Systems and Transportable Gas Containers Regulations
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
SELECT	The Trade Association for Electrical Contractors in Scotland
UKAS	United Kingdom Accreditation Service

DISCUSSION DOCUMENT

If you wish to post comments to our gas safety bulletin board as part of the debate please send these to our dedicated e mail address at:
gas.safety.comments@hse.gov.uk



The full text of this and other Discussion Documents can be viewed and downloaded from the Health and Safety Executive web site on the internet:

www.open.gov.uk/hse/disdocs/

Discussion Documents are available from:
HSE Books, PO Box 1999
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