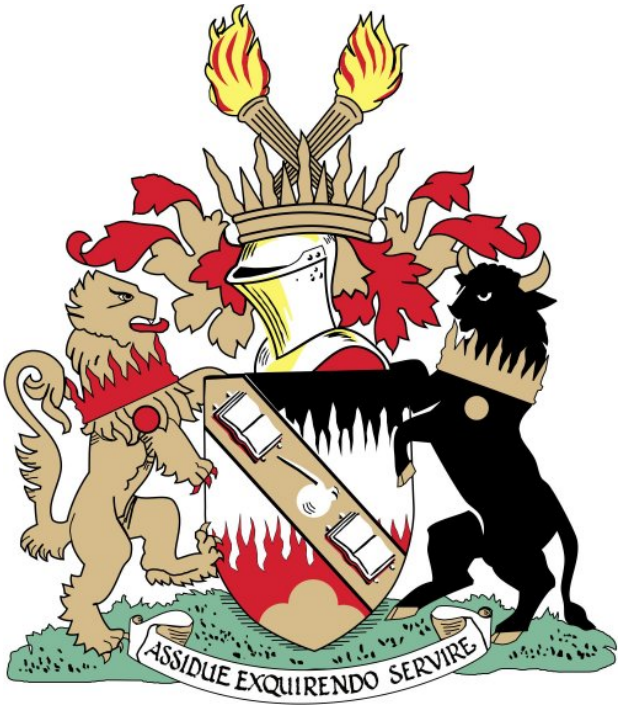
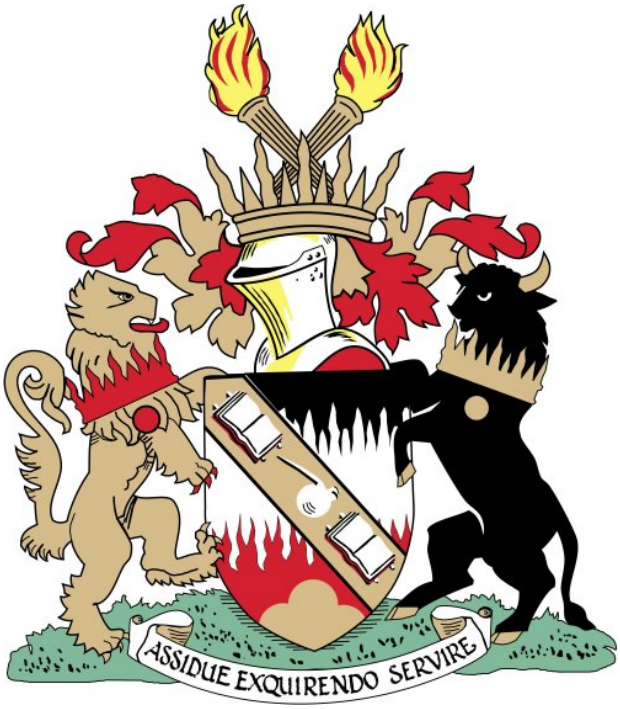


THE INSTITUTION OF GAS ENGINEERS & MANAGERS

ASSESSMENT OF THE RISKS ASSOCIATED WITH THE INTRODUCTION OF COMPETITION INTO THE PROVISION OF METERING SERVICES – A REPORT PREPARED ON BEHALF OF OFGEM BY THE IGEM GAS METER COMPETITION RISK ASSESSMENT PANEL

Registered Charity No. 214011



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Dr R J Harris ..... **Dated:** .....

Chairman, IGEM Risk Assessment Panel

J Williams ..... **Dated:** .....

Chief Executive Officer, IGEM

Registered Charity No. 214011

Institution of gas Engineers & Managers

Founded 1863
Royal Charter 1929
Patron
Her Majesty the Queen

ASSESSMENT OF THE RISKS ASSOCIATED WITH THE INTRODUCTION OF COMPETITION INTO THE PROVISION OF METERING SERVICES – A REPORT PREPARED ON BEHALF OF OFGEM BY THE IGEM GAS METER COMPETITION RISK ASSESSMENT PANEL

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Executive Summary

1 Purpose and background

This report has been prepared on behalf of Ofgem by the Gas Metering Competition Risk Assessment Panel (hereafter referred to as "the Panel"), under the chairmanship of Dr Bob Harris and the auspices of The Institution of Gas Engineers and Managers (IGEM).

The findings of the risk assessment are for consideration by Ofgem and are likely to form part of Ofgem's future dialogue with the Health and Safety Executive (HSE), with respect to HSE's concerns associated with emerging competition in the provision of metering services for gas meter installations.

Ofgem believes that the provision of gas metering and related services should be unbundled from the regulated gas transportation business and subjected to competition to facilitate lower costs and enhanced levels of service by means of an open market. It has put processes in place to achieve this goal.

HSE has raised various concerns related to meter competition. Two of its prime concerns have been:

- whether the pressure regulator should be part of RGMA i.e. should it be part of the competitive provision of metering components or should ownership/responsibility be retained by the GT?
- DIY meter installation and ownership.

To address all concerns, Ofgem proposed an independent risk assessment to compare pre RGMA services and services in the competitive environment. IGEM was approached and agreed to set up the Panel according to Terms of Reference provided by Ofgem. The risk assessment was carried out on the understanding that Panel members would provide expert technical opinion rather than a commercial view or the view of their employer.

2 Risk assessment methodology

The Panel obtained information on the historical absolute level of risk when Transco (now NGT) alone provided metering services, but little or no information existed on which to calculate an absolute level of risk under competition. Thus, the Panel adopted a risk assessment methodology in which views from all sections of the gas industry were obtained by means of a questionnaire. Each stage of the meter installation cycle was listed in a logical sequence based on the life cycle of the meter as set out in the gas MAMCoP (see Sub-Section 2.4). Nine key areas of activity were identified. A further category was added to cover unauthorised and "do it yourself" (DIY) work. For these ten key activities a total of 57 hazards, where there was a potential for risk, were identified, and listed under each key activity.

Recipients of the questionnaire were asked to attribute a subjective risk assessment to each hazard, i.e. risk will not change, or risk will increase or risk will decrease, to enable risks to be evaluated and compared.

Having indicated their views on any change in risk, recipients were also asked to set out the reasons for their views and to describe any current control measures they had in place to deal with the hazard in question. In cases where it was identified that risk would increase, participants were also asked to describe any mitigating measures they thought would be beneficial in reducing risk, thus enabling the Panel to obtain an overall view of the need for mitigating measures and to feed information back into the RGMA process.

To apply the methodology described, a baseline was needed against which the subjective change in risk could be gauged. This was taken as the start of the RGMA Project i.e. August 2000.

CDs containing the questionnaire, guidance on completion, the baseline case and a worked example were sent to approximately 350 contacts which represent gas industry organisations and which were given a month in which to respond. Responses were treated in strict confidence.

3 Analysis of responses

Suppliers and shippers who responded covered 95% of the registered gas supply meter points at the time the questionnaire was posted. The gas suppliers (and associated GTs) forming the hub of the RGMA arrangements, submitted completed questionnaires, as did the majority of gas MAMs currently operating.

The Panel split into four working groups, each group analysing the responses in key activities allocated to them. As the quality of responses varied, weighting was applied according to the level of relevant detail and quality of evidence provided by the respondents to support the views they expressed. Account was also taken of each organisation's activity in the market and, hence, its knowledge of RGMA.

The four group analyses were discussed by the full Panel which considered respondents' views for each activity to assess whether the risk had changed and respondents' suggestions for mitigating measures and any other relevant comments they had made.

The Panel then developed its conclusions and recommendations from these considerations and discussions.

4 Conclusions and Recommendations

The Panel did not restrict its conclusions and recommendations to those based on the responses to the questionnaire. It used its own extensive expertise to draw conclusions and provide further recommendations, to filter out unrepresentative or inaccurate comments, and to give emphasis to issues having the greatest impact.

Overall, the Panel concluded that, on balance, risks had increased as a result of RGMA although this increase was not quantified. However, the Panel noted that a number of the major players involved in the competitive metering services market had provided detailed evidence of important controls they had already put in place to manage the risks involved. Notwithstanding these controls, the target for the Panel was to review carefully all risks in the RGMA process and to offer mitigating measures that would return the risk level to that under the baseline case (or indeed to reduce it further).

The Panel therefore recommend the following steps to sufficiently reduce the risk level, with full detail given in Section 10.

(a) **The pressure regulator**

The regulator should be retained as part of the meter installation.

(b) **The Gas MAMCoP**

(i) The MAMCoP should be made mandatory in law.

(ii) An organization should be appointed to manage and to maintain the MAMCoP. Constant communication should be maintained with CORGI and standards-making organisations.

(iii) There should be a MAM registration scheme with auditing of MAMs activities including training and siteworks.

(c) **Provision of information**

(i) All GTs should put processes in place to provide pressure information to MAMs and OAMIs (in accordance with current Regulations).

(ii) Services should be labelled with pressure information, including GT delivery pressure, and capacity, to an approved industry labelling standard.

(d) **Standards**

There should be new and revised industry standards to cover design, installation, inspection and maintenance, for example on "medium pressure" .

(e) **Training and competency**

CORGI ACS training and competency should be reviewed and enhanced.

(f) **GT Authorisation**

All GTs should have authorisation schemes for MAMs.

(g) **Review of legislation**

(i) GM(C&D)R should be reviewed.

(ii) The GT responsibility for pressure management should be clarified in legislation.

(iii) The legal framework should be clarified to recognise the existence and duties of MAMs and MOs.

(h) **DIY**

DIY installation should be discouraged by effective communication of legal obligations. Consideration should be given to banning DIY meter installation work.

1 Preparation of the Report

This report has been prepared on behalf of Ofgem by the Gas Metering Competition Risk Assessment Panel (hereafter referred to as "the Panel"), under the chairmanship of Dr Bob Harris and the auspices of The Institution of Gas Engineers and Managers (IGEM).

The findings of the risk assessment are for consideration by Ofgem and are likely to form part of Ofgem's future dialogue with the Health and Safety Executive (HSE), with respect to HSE's concerns associated with emerging competition in the provision of metering services for gas meter installations as described in Section 2.

In preparing the report, IGEM made use of information provided by reputable companies. IGEM was not in a position to verify some of this information, for example on existing controls, and has prepared this report assuming the accuracy of such unverified information.

IGEM has complied with the Terms of Reference stipulated by Ofgem, in preparing this Report. This does not preclude Ofgem requesting clarification of, or further investigation into, any particular part of the Report.

2 Background to the introduction of competition into metering services

2.1 Ofgem believes that the provision of gas metering and related services should be unbundled from the regulated gas transportation business and subjected to competition to facilitate lower costs and enhanced levels of service by means of an open market. It has put processes in place to achieve this goal.

2.2 Metering competition is intended to allow gas suppliers to make their own arrangements for meters and metering services so that they can benefit from more competitive prices. Additionally, larger consumers will be able to buy and manage their own meters or to choose a meter service provider who meets their specific needs. For domestic consumers, the process should be invisible but could provide such consumers with the benefits of better meters and lower bills.

The current legislative framework, which has existed since the Gas Act 1995, supports gas metering competition. In May 2000, Ofgem published proposals to secure effective competition in gas metering services. This led to the Review of Gas Metering Arrangements (RGMA) being set up in August 2000. Its objectives were to design and deliver robust business processes and data flows to facilitate:

- competitive gas metering services
- the system separation of Transco's transportation and metering businesses
- changes to the business processes and data flows.

2.3 Competition in the provision of gas metering services is already happening. From May 2002, British Gas awarded contracts for the provision of metering services in the UK. Before meter competition was introduced, most gas metering services were provided by the GT, principally Transco.

2.4 In January 2002, Ofgem facilitated the establishment of a Technical Issues Sub-Group (TISG) to ensure that any technical and safety issues emerging through competition in gas metering were effectively identified and addressed, as necessary.

After review, although TISG did not identify any legal impediment to the operation of the processes and dataflows developed by the RGMA project, potential gaps were identified in the existing technical and health and safety framework due to the changes of responsibility envisaged by the competitive metering market. Additionally, it was noted that much of the documentation relating to gas metering regulations, standards and guidance was not co-ordinated or available from a single source.

Following this review, it was decided that TISG should develop and publish a gas Meter Asset Managers Code of Practice (MAMCoP). The development of this document would bring together all relevant technical documentation and legal requirements covering the complete life cycle of the meter installation, in order to assist new market entrants and facilitate competition.

3 Background to the risk assessment

3.1 Throughout the RGMA process, HSE has raised various concerns related to meter competition. Two of its prime concerns have been:

- whether the pressure regulator should be part of RGMA i.e. should it be part of the competitive provision of metering components or should ownership/responsibility be retained by the GT?
- DIY meter installation work and ownership.

3.2 TISG recognised that the processes and data flows for competitive metering, baselined by the RGMA project, were compliant with existing technical and health and safety obligations. However, much of the information on those obligations was disparate and not available from a single source.

In order to bring all relevant information into one document, Ofgem arranged, through TISG, the development of the MAMCoP. This is intended to ensure that the regulatory and technical framework is fully understood and followed by new gas metering service providers.

3.3 In order to focus on HSE's concerns, Ofgem proposed an independent risk assessment and gap analysis of legacy services and services in the competitive environment.

3.4 TISG proposed that an expert review panel should carry out a risk assessment. IGEM was approached and agreed to set up the Panel on behalf of Ofgem.

3.5 The risk assessment carried out by the Panel took place in parallel with the development of the MAMCoP. At the time of writing, the MAMCoP is being amended following industry consultation, but it has provided a basis for the structure used for the risk assessment process. Findings from the risk assessment process will be fed back into the MAMCoP, where appropriate.

4 Panel Terms of Reference

Ofgem provided the Terms of Reference for the Panel. These are reproduced in Appendix 1.

5 Panel constitution and membership

5.1 The constitution of the Panel originally stipulated by Ofgem is shown in the Terms of Reference in Appendix 1. However, the IGEM Panel, when established, suggested a number of changes that would, in its opinion, ensure representation of the vast majority of stakeholders. The final constitution of the Panel is shown in Appendix 2.

5.2 An Ofgem representative was invited to attend Panel meetings as an observer and to provide the Ofgem viewpoint and support. An NGT representative also attended as an observer to give its viewpoint of competition in gas metering and to facilitate the release of information forming the RGMA Baseline Case. During regular liaison meetings between HSE and Ofgem, HSE had suggested that the Panel should include consumer representation. As a result, EnergyWatch was approached but did not choose to participate in the assessment. Subsequent to the publication of this Report, arrangements are being made for discussions between Ofgem and EnergyWatch.

5.3 The risk assessment was carried out on the understanding by Panel members that they would provide their expert technical opinion rather than a commercial view or the view of their employer.

5.4 The Panel did not wish to exclude views from industry during the formulation of the risk assessment method. It was agreed that potential participants in the risk assessment process would be able to put forward their views during the development of the risk assessment process, if they wished, via the Panel representatives.

6 Development of the Questionnaire

6.1 Choice of methodology

6.1.1 While the Panel obtained information on the historical absolute level of risk involved in the provision of metering services, i.e. the situation which prevailed when Transco alone provided these services, little or no information existed on which to calculate a revised absolute level of risk associated with the provision of competitive metering services.

Thus, the Panel concluded it would be most appropriate to adopt a risk assessment methodology in which views would be sought by means of a questionnaire from across all sections of the relevant parts of the gas supply industry regarding perceived changes (if any) in the level of risk associated with separate stages of the meter installation service process.

6.1.2 Each stage of the meter installation cycle was listed in a logical sequence using meter asset management activities in the order they occur in the life cycle of the meter and as set out in the MAMCoP.

Nine key activities were identified by examining the MAMCoP. These were as follows:

- A Quality management systems and audit procedures
- B Planning and design
- C Installation and commissioning
- D Operation
- E Maintenance and inspection
- F Modifications
- G Provision of information
- H Removal and decommissioning
- I Provision and maintenance of asset records.

The Panel agreed there should be an additional activity heading (J), "Uncontrolled Meter Work", to cover unauthorised and DIY work. For these ten key activities, a total of 57 hazards (see Appendix 3), where there was a potential for risk, were identified and listed under each key activity heading.

6.1.3 Recipients of the questionnaire were asked to attribute a subjective risk assessment to each hazard, i.e. risk will not change, or risk will increase or risk will decrease, which would enable risks to be evaluated and compared.

6.1.4 In giving their views on any change in risk, recipients of the questionnaire were also asked to set out the reasons for their view and to describe any current control measures they had in place to deal with the hazard in question. In cases where it was identified that risk would increase, participants were also asked to describe any mitigating measures they thought would be beneficial in reducing risk, thus enabling the Panel to obtain an overall view of the need for mitigating measures and to feed information back into the RGMA process.

6.1.5 As the MAMCoP identifies four categories of meter installation ("low pressure" domestic, "medium pressure" domestic, industrial and commercial and other installations) it was necessary to give respondents an opportunity to respond in each category.

6.2 Determination and definition of the baseline case

6.2.1 In order to apply the methodology described above, it was necessary to have a baseline situation against which the subjective change in risk could be gauged.

6.2.2 For practical reasons associated with NGT's ability to reflect the circumstances prevailing at various times prior to the introduction of competition, the baseline chosen was the start of the RGMA project i.e. August 2000, at which time the main provider of metering services was Transco. This date was agreed with Ofgem as being appropriate for the baseline case. That baseline case (see Appendix 3), reflecting circumstances at August 2000, was provided by NGT for the risk assessment process.

6.3 The questionnaire

6.3.1 On the basis described above, the questionnaire was developed for organisations involved in all aspects of gas metering and the provision of gas metering services. A covering letter, guidance for completion, and the Transco baseline case were also drafted. A small "worked example" was also included to aid completion. These documents comprised a "pack" sent out to participants. The Baseline Case version of the questionnaire is set out in Appendix 3 (downsized from the original) along with a sample page of the Questionnaire itself.

6.3.2 It was agreed that all responses would be treated in the strictest confidence with the sources known only to the Panel Secretary. However, in order to deal with any queries, maintain a record of responses and inform participants about the final report, participants were asked to provide contact details when completing the questionnaire. Also, in this way, the number of responses in each type of organisation was monitored to ensure that there were adequate response rates to obtain representative views taken from across all industry participants.

6.4 Delivery of the questionnaire

6.4.1 Except for a handful of cases, only postal addresses were available, thus making it impractical to send out the questionnaire by email. In addition, there were few names available that would enable the questionnaire to be sent to a specific person in an organisation.

6.4.2 353 copies of the "pack" were posted between 29th and 31st December 2003 on CD with a covering letter from the Chairman inviting participation in completing the questionnaire.

The CD contained the following two Microsoft Word documents.

(i) The risk assessment questionnaire in four parts:

- Part 1 - Contact details
- Part 2 - Details of organisation/company
- Part 3 - The risk assessment itself
- Part 4 - A brief "worked example".

(ii) The Transco baseline case.

6.4.3 Participants were invited to return their responses by email to the Panel Secretary by 26th January 2004.

6.4.4 CDs were posted out to the following categories of organisation:

Industry bodies, for example trade associations	5
Gas suppliers (non-domestic)	63
Gas suppliers (domestic)	32
GTs (some of which were also MAMs)	13
Metering technology companies	17
Gas shippers	144
Ofgem Approved Meter Installers (OAMIs) (some of which were also MAMs)	79
Total	353

The Panel was aware that, of these 353, there would be an appreciable degree of duplication due to companies operating from more than one location, or trading under more than one name, etc. In addition, it was recognised that some companies had ceased to exist since the sources for the list had been obtained.

7 Level of response

7.1 23 replies were received, as follows:

Completed questionnaires	19
Not wishing to participate	2
Queried the process but did not respond	2

One of the 19 completed responses was discarded as the activities of the company concerned did not fall within the scope of the risk assessment. As a result, there were 18 completed responses which were subjected to analysis and interpretation by the Panel.

7.2 Respondents who completed questionnaires claimed to belong to the organisation categories as follows:

MAMs	8
Gas suppliers (non-domestic) (GS(ND))	5
Gas suppliers (domestic) (GS(D))	3
GTs	5
Metering technology companies	0
Gas shippers	5
OAMIs	8
Others	3
Total	37

The total is greater than the number of responses received because some companies were involved in more than one commercial activity. For example, they may have been both a MAM and an OAMI. However, for the purposes of completing the questionnaire, they were asked to specify only one commercial activity to which their response would apply.

7.3 Suppliers and shippers who responded covered 95% of the registered gas supply meter points at the time the questionnaire was posted. The gas suppliers (and associated GTs) forming the hub of the RGMA arrangements submitted completed questionnaires, as did the majority of gas MAMs currently operating.

8 Analysis of responses

8.1 The Panel split into four working groups, each group analysing the responses in key activities allocated to them.

8.2 A simple representation of the responses is given in **Figure 2.** This shows the "hotspots" where an activity or hazard within an activity was considered by different respondent types to either give rise to a possible increase or decrease in risk. The degree of change is not represented.

The overlay (Figure 1) to Figure 2 shows the degree of participation of each respondent in the current RGMA era of metering.

Figure 2 indicates that GTs and the trade association generally perceive an increase in risk across most if not all activity categories, whereas gas suppliers, shippers and OAMIs see an increase in risk across much fewer activity categories and, in some categories, see a decrease in risk as a result of RGMA. The perceptions of the five MAMs are, however, diverse.

8.3 **Figure 3** provides a representation of the substance and, hence, value of the responses grouped into "activities" against respondent types, i.e. activities A,B,C,D,E,F,G,H,I,J against OAMIs, MAMs, Shippers and Suppliers, GTs and Trade Association. It does **not** represent a measure of the degree of increase or decrease in risk. The figure was useful where the Panel was confronted with conflicting industry views.

The calculations leading to the figure are not shown. These are held in IGEM's archives, along with the detailed analysis by the working groups.

The figure has been produced from calculations (not shown) based upon the total number of responses, discounted responses ("no response" from Figure 2), the unweighted aggregate risk (total increase (+) less total decrease (-) from Figure 2) and a value rating factor determined from close analysis of the (+) and (−) responses, i.e. the detail of the controls currently in place, the level of reasoning to decide on the marking and the detail of mitigation (both (+) and (-)) given which additionally strengthen the reasoning.

Figure 3 does not address analysis of "no change responses or no responses". Hence, Figure 3 may only be used to complement Figure 2 for (+) (blue) or (−) (green) responses.

8.4 The full Panel considered and discussed:

- respondents' views for each activity (A to J) to assess whether the risk had changed under RGMA
- respondents' controls and suggestions for mitigating measures and any other relevant comments they had made.

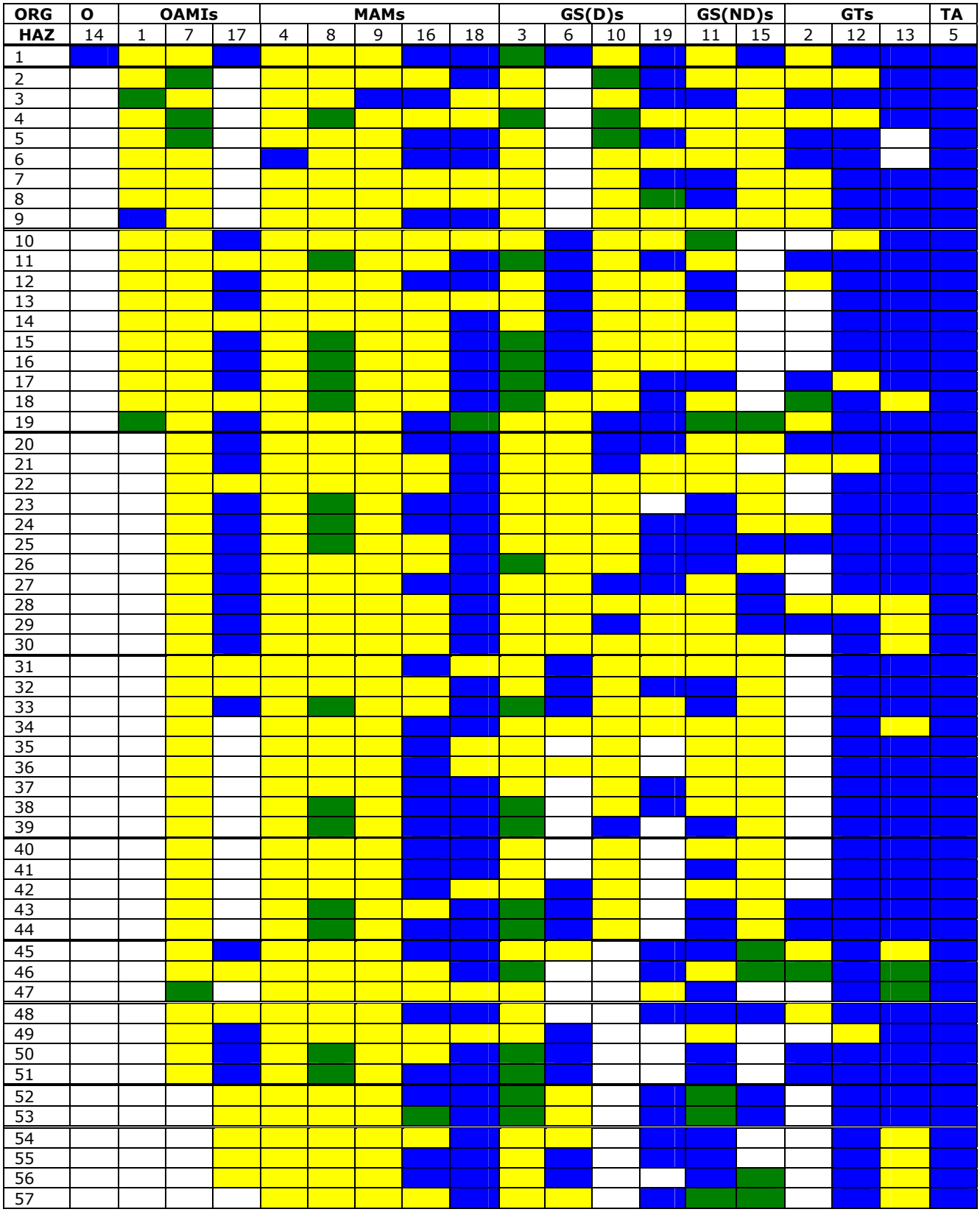
The Panel then developed its conclusions and recommendations from these considerations and discussions.

ORG	O	OAMIs			MAMs					GS(D)s				GS(ND)s		GTs			TA
	14	1	7	17	4	8	9	16	18	3	6	10	19	11	15	2	12	13	5

Note: This figure may be used in conjunction with Figures 2 and 3. It shows the degree of participation of each respondent in the current RGMA.

High   Medium   Low

FIGURE 1 - LEVEL OF PARTICIPATION IN RGMA



Note 1: For hazard detail, see Appendix 3.

Note 2: This shows the "hotspots" where an activity or hazard within an activity was considered by different respondent types to either give rise to a possible increase or decrease in risk. The degree of change is not represented.

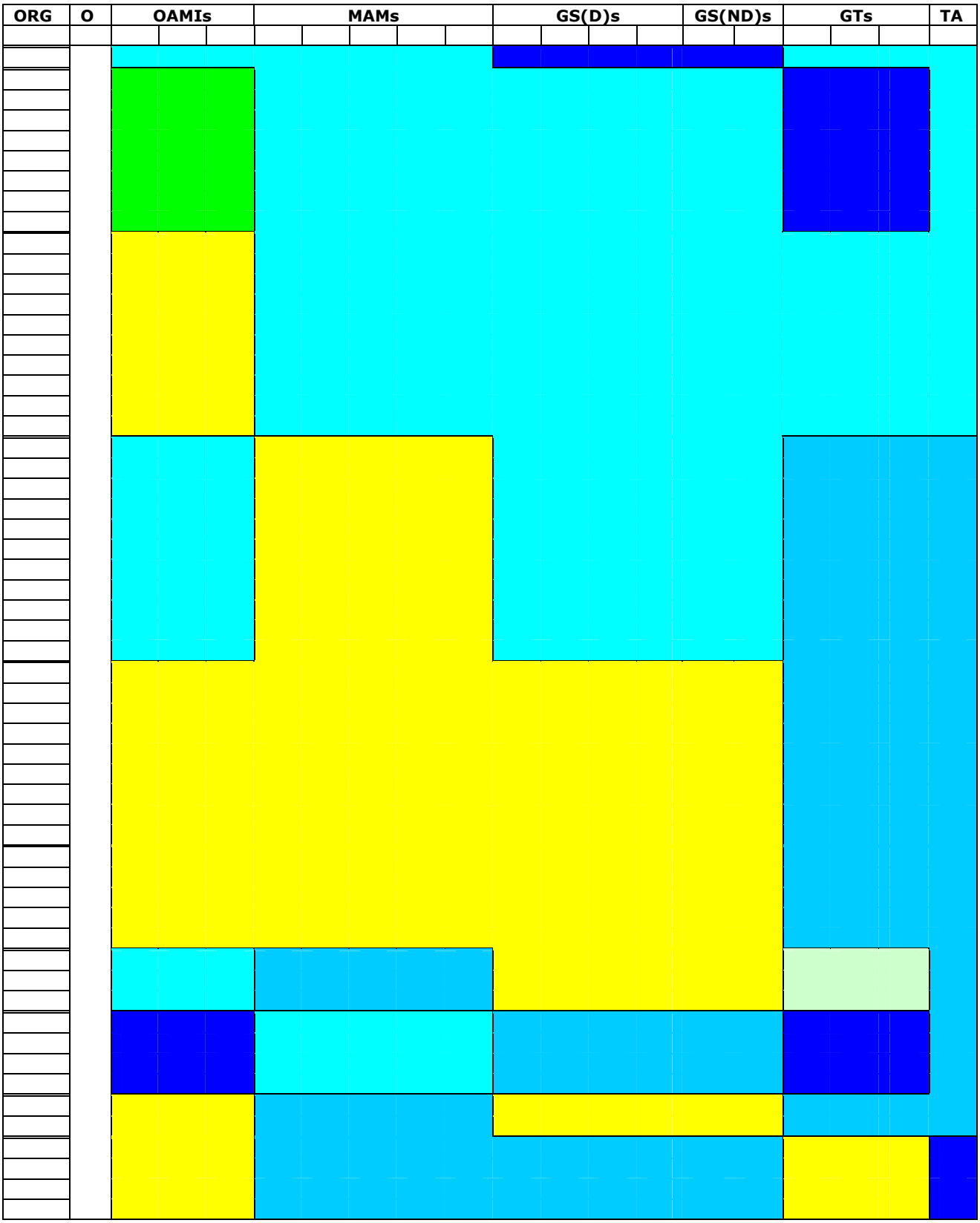
No change in risk

Decrease in risk

Increase in risk

No response

FIGURE 2 – OVERALL REPRESENTATION OF RESPONSES



The calculated values have been translated into the colour coding on a simple basis i.e. the highest calculated value is considered the highest quality set of responses (dark blue and dark green (there are no "dark greens")) and the lowest calculated value the least reliable (yellow) (which is not to say that such a set of responses is unreliable or has no value).

Very High (and show an increase in risk)

High (and show an increase in risk)

Intermediate (and show an increase in risk)

Low

Intermediate (and show a decrease in risk)

High (and show a decrease in risk)

Very High (and show a decrease in risk)

FIGURE 3 – SUBSTANCE OF RESPONSES

9 Summary of respondent's views

After discussing the findings of the four working groups in plenary, the Panel was able to summarise respondents' views of the change in risk and their suggested mitigating measures as follows. **These do not necessarily reflect the Panel's recommendations** (see Section 10).

9.1 A - Quality Management Systems

Some organisations evidenced control that are already in place and which appear to mitigate an increase in risk (effectively resulting in no change to the risk level). However, overall, respondents indicated there would be an increase in risk. This appears to be because some organisations have still to establish appropriate controls, either because they are not yet participating, and/or are expecting the "industry" to put these controls, in place.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law
- introduction of processes by GTs to provide pressure information to MAMs and OAMIs.

9.2 B - Planning and Design

Overall, the respondents identified an increase in risk. In some cases, the increase in risk related to concerns about current standards and competencies (where improvements were seen as necessary) and verification of pressure tiers.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law
- update industry standards including procedures for verifying pressures at the outlet of the ECV
- improve and increase CORGI ACS competency training and assessment
- improve provision of information on the pressure of gas in pipes, by GTs.

9.3 C - Installation & Commissioning

Respondents raised concern over the competency of MAMs' personnel and whether there are quality management systems (QMSs) in place to monitor the work areas.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law
- GTs to put in place authorisation schemes for MAMs to carry out work on their behalf
- improve and increase CORGI ACS competency training and assessment
- clearly label services with details of the pressure tier to an industry standard.

9.4 D - Operation

Respondents raised concern over the competency of MAMs' personnel and whether there are QMSs in place to monitor the work areas.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law

- GTS to put in place authorisation schemes for MAMs to carry out work on their behalf
- improve and increase CORGI ACS competency training and assessment
- clearly label services with details of the pressure tier, to an industry standard.

9.5 E - Maintenance and Inspections

Some organisations gave superficial views of marginal increases in risk without any reference to controls or indication of how the risk was assessed. Other organisations have significant evidence of controls in place to mitigate associated risks, but have then made an assessment of the risk either from another industry perspective, or as if the controls were not taken into account (which artificially inflates the level of risk).

Other organisations, probably those who are actively involved in the competitive metering market today, have substantial detailed controls in place (some externally accredited) and have, therefore, indicated a reduced level of risk in a number of areas.

Overall, respondents indicated there would be a slight increase in risk. This appears to be because some organisations are not yet actively involved in the competitive metering market and, therefore, have still to establish appropriate controls before market entry.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law.

9.6 F - Modifications

A lower level of response was received in this section. Comments were predominantly the views expressed by MAMs and GTs.

As in Sub-Section 9.5, the methodology applied to assess risk by one of the GT responses artificially inflates the level of risk identified.

Again, participants who are currently active in the competitive metering market have evidenced significant controls and levels of reduced risk in some areas. Other areas are "no change" when assessed against the baseline case.

There is a perception that there will be a transfer of legal responsibility for pressure reduction at the meter and inlet pressure to appliances from the GT to the MAM requiring amendments to Gas Safety (Management) Regulations and Gas Safety (Installation & Use) Regulations.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law
- transfer legal responsibility for pressure reduction at the meter, and inlet pressure to appliances, from GTs to MAMs
- control DIY activities
- ensure comprehensive CORGI ACS streams, training and assessment.

9.7 G - Provision of information at site

Few respondents saw an increase in risk.

Mitigation measures suggested by respondents

- introduce a registration scheme for MAMs

- ensure competency of relevant persons, via CORGI ACS etc.
- comply with the MAMCoP.

9.8 H - Removal and de-commissioning

Most respondents saw an increase in risk.

Mitigation measures suggested by respondents

- ensure competency of relevant persons, via CORGI ACS etc.
- introduce a registration scheme for MAMs
- comply with the MAMCoP
- audit MAMs.

9.9 I - Provision and maintenance of asset records

Some respondents saw an increase in risk.

Mitigation measures suggested by respondents

- introduce a registration scheme for MAMs
- comply with the MAMCoP.

9.10 J - Uncontrolled work/work by persons who are not competent

Four respondents did not answer any of the questions. Some respondents considered that there was no change in the level of risk, based on systems and procedures their individual companies had put in place. OAMIs and MAMs expressed confidence in their own operations, but their answers do not shed any light on whether there is change in the level of risk in respect of uncontrolled work e.g. DIY.

Some respondents indicated a change in the level of risk but little information in support of that view. Others gave more information on the reasons why they considered that the level of risk had changed.

It would appear that the majority of organisations are of the opinion that risks addressed in this activity are slightly increased.

Mitigation measures suggested by respondents

- introduction of a MAMCoP mandatory in law
- a single governing body to audit MAMs' QMS
- improved system of notification for connection and disconnection, including penalties for non compliance
- industry standards
- introduce a registration and accreditation scheme for MAMs
- one organisation to take responsibility for updating the MAMCoP.

10 Panel commentary and conclusions/recommendations

Sub-Section 10.1 outlines the Panel's commentary and Sub-Section 10.2 provides the Panel's conclusions/recommendations.

10.1 Commentary

(a) General

The Panel's Terms of Reference required the identification of any increase in risk as a result of RGMA and key conclusions are given in Sub-Section 10.2. These conclusions and recommendations clearly identify an overall increase in risk, although this has not been quantified. Furthermore, the scale of the recommendations indicates that the increased risk would be mitigated by taking the steps outlined. For some hazards, it is conceivable that the risk would be reduced to a level lower than pre RGMA by full implementation of the recommendations. It must also be noted that some of the results of implementing the recommendations are already in effect in that significant existing RGMA participants currently have relevant important controls in place, for example:

- Gas supplier implementation of ISO 9001 for managing contracted MAMs
- GT provision of pressure and capacity information
- GT authorisation for regulator setting and sealing
- MAM policy to replace suspect regulators without investigation
- MAM specifications and procedures for meter products and meter installations
- MAM competency training and assessment.

Notwithstanding these controls, the target for the Panel was to review carefully all risks in the RGMA process and to offer mitigating measures that would return the risk level to that under the Baseline Case.

(b) The regulator

The Questionnaire responses raised issues associated with requirements to reset regulators. In particular, the Panel considered resetting of regulators a risk issue because of the significant effects that it could have on the operation of downstream appliances.

It was the Panel's view that effective control could be exercised by GTs implementing authorisation schemes (MAMs warrant approved competency).

It is preferable that GTs are not required to own regulators. In Sub-Section 10.2, the Panel has recommended that the regulator be retained as part of the meter installation. With the onset of RGMA, standards making organisations, Ofgem and CORGI have embarked on a comprehensive programme of creating new and revised standards and procedures. The resultant framework of ACS CoPs and standards (illustrated in Appendix 5) will be more robust than that which existed pre RGMA and, just as important, will be available to all parties (via the release of hitherto internal NGT procedures, etc.) In this respect, a relative decrease in risk would occur as a result of RGMA. All these elements assume that the meter installation comprises the meter, regulator and associated safety devices. It is not certain that there will be support from some or all of those organisations for re-visiting the issues to consider separation of the regulator in their standards and procedures.

There is also a view that, under certain circumstances, risk could be increased by ownership of the regulator being retained by GTs. Under current installation arrangements, a potential gas user is provided with either a sealed or blanked service pipe, or a commissioned or blanked meter installation. If GTs retain ownership of the regulator, there will be an economic driver to install the service pipe and the regulator at the same time. This would provide a more obvious and easier opportunity for unauthorised connection. Under such circumstances, no request for a meter is likely to be made and uncontrolled use of gas could persist for some while without being detected.

With respect to exchange of information, the Panel's conclusion is that there is no significant difference in the processes involved, whether dealing with domestic, small non-domestic, or large non-domestic installations and it was not necessary to differentiate between these with respect to authorisation procedures, etc.

(c) **Multi-occupancy buildings**

While the consequences of an incident in a multi-occupancy building could be more serious than for a single occupancy building, the probability itself would be the same. The exception may be the arrangements shown in Figure 38 of IGE/G/1 and which is not recommended for new installations. In this case, there may be a higher risk than for "recommended arrangements". The adoption of IGE/G/1 by the gas supply industry would mean that new designs will be of the recommended type and any additional risk would be associated with "legacy" installations. However, this difference in risk is not associated with RGMA, and mitigation by implementation of the recommendations in Sub-Section 10.2 may indeed improve the safety level in this respect.

However, it would be sensible to bolster the mitigation by having a specific, more robust, GT authorisation mechanism for single supply points to hospitals, offices and blocks of private dwellings with multiple occupancy. Currently, NGT operates a site-specific authorisation for higher pressure industrial and commercial meter installations for MAMs which, if applied to installations in multi occupancy buildings, would additionally serve to mitigate risk.

(d) **Higher pressure gas supplies**

The onset of higher pressure gas supplies to domestic premises cannot readily be subject to the pre and post RGMA analyses. However, it is clear that implementation of the recommendations in Sub-Section 10.2, in particular concerning provision of information and training and competency, would serve to mitigate any increase in risk which, in the Panel's view, would exist irrespective of RGMA.

(e) **DIY**

Taking into account responses to the questionnaire, together with other views expressed, the Panel gave further specific consideration to the question of DIY work on meter installations – particularly because this issue had been a specific concern raised by HSE and identified in the Panel's Terms of Reference.

In debating this question, the Panel believed it would be helpful to consider two separate categories of DIY activity – the first involving individuals wishing to undertake DIY work but who wish to act lawfully,

the second involving unscrupulous individuals engaging in DIY activity intending to defraud i.e. stealing gas. Records indicate that the vast majority of incidents involving tamper, with potential for theft of gas, involved the meter only. Tampering with the regulator in such cases was very rare.

In both cases, in terms of "self installation" the current law is clear. The person performing the installation must be competent and must inform the gas supplier about meter installation changes associated with disconnection or reconnection of supply. In this respect, the introduction of competition in metering services should not change the level of risk involved.

In the first DIY category (i.e. those wishing to act lawfully) the Panel's view was that, at present, few domestic and small industrial and commercial consumers would be aware that it was possible for them to own, install or operate their own meter. Also, at present, metering equipment is generally only available from specialist suppliers and there is little financial incentive for the law-abiding consumer to own or install their own meter. In particular, the cost of metering components is low compared, for example, to those associated with installation and use of gas burning appliances. The Panel therefore considered there is no driver at present for an increase in this category of DIY installation. However, the Panel were mindful of the possibility this situation may change with wider availability of gas metering products to the public in the future, with the potential for an increased risk, if DIY installation is taken up. Short of imposing an outright ban on meter related DIY by law (and the Panel did not know if this was possible) the Panel identified three actions which could be implemented to discourage meter related DIY by ensuring the would-be DIY installer would be aware of their responsibilities. These actions were:

1. To place a responsibility on manufacturers of metering components to include with the product a notice indicating that, by law, the installer must be competent and that they must inform their gas supplier of the intended work.

2. To place a further responsibility on the retailer at the point of sale to ensure the purchaser of product is aware that the installer must be competent and the gas supplier informed.

3. Taking this further, retailers or product suppliers could be required to request proof of competence at the point of sale (for example by seeking proof of CORGI registration, and separately to inform the gas supplier of the sale and provide customer details).

These three actions would deal with the genuinely competent or naïve person who wishes to abide by the law. Although they will not deter the installer who is prepared to ignore the law, the Panel did not consider there was a real "driver" for an increase in illegal installation.

As mentioned above, a fourth option would be to ban DIY installation outright by law. However, the Panel considered this would have no impact on those unscrupulous individuals prepared to ignore the law and in this regard the introduction of competition in metering services would not change the risk profile.

For the second DIY category (i.e. intent to defraud), current industry processes mitigate the opportunity for DIY meter exchanges for such unscrupulous reasons both through supplier-driven meter reading and gas

suppliers' 2 yearly inspections. Actions undertaken by the GT will also highlight and mitigate any such occurrences.

Where a legacy meter is exchanged for a customer-owned meter and the Connection and Disconnection documents are completed and sent to the respective supplier, then the meter asset information (meter type, number of digits, serial number etc.) will be updated, and opening reads held within the supplier systems. Meter read history (consumption) from the legacy meter will be applied to the new meter. Meter reads will then be taken on the normal cyclic meter read process.

If the Connection and Disconnection documents are not completed and duly passed to the respective supplier, the supplier will have no record of the meter exchange taking place. However, on the next cyclic read process, there would be a mismatch between meter serial number and expected meter reading, which would raise an exception for further investigation.

In addition, further verification of meter asset detail is undertaken on the 2 year safety inspection carried out as part of the gas suppliers licence obligations, which would again highlight un-notified DIY meter installations.

If there is no registered system user for the meter point reference number i.e. no record of a meter being attached to the service, then the GT would instigate a service isolation after 12 months, and any DIY meter installations would be highlighted at this stage.

(f) **The transition period**

The recommendations outlined in Sub-Section 10.2 ideally should be implemented with immediate effect. While this is not possible, some priority will need to be given to transitional arrangements pending the availability and formality of the gas MAMCoP, enhanced standards and improved competency training and assessment. Such arrangements may include increased surveillance by gas suppliers of their arrangements with MAMs and by CORGI, as contracted to Ofgem, to underpin the OAMI scheme, pending both the MAM registration arrangements and the MAMCoP. NGT has stated that it will exercise its proposed inspection and auditing arrangements soon after cut over to RGMA.

A key issue in any transition arrangements is communication of expectations to all RGMA participants, both with respect to the issues above and to issues related to other recommendations, for example on changes to legislation.

It should be noted that the assumption of mitigation under the recommendations in Sub-Section 10.2 does not allow for a transition period and the decision-makers will need to assess and react as necessary to any increased risk arising in the transition period.

10.2 Conclusions and Recommendations

Many of these recommendations could be progressed and implemented in parallel. This would require the participation of all relevant organisations and companies. The required progress is urgent as metering activities have already changed and further rapid change is anticipated.

The recommendations are set out in an order that loosely represents priority but certain aspects of later recommendations will need to be actioned as a high priority.

Further Panel observations are given in Appendix 4.

(a) **The pressure regulator**

The regulator should be retained as part of the meter installation.

(b) **The gas MAMCoP**

(i) The MAMCoP should be made mandatory in law.

(ii) An organization should be appointed to manage and to maintain the MAMCoP. Constant communication should be maintained with CORGI and standards making organisations.

(iii) There should be a MAM registration scheme with auditing of MAMs activities including training and siteworks.

The MAM should be required to work to Quality Management Systems, via the MAMCoP, which will include full internal and external auditing, for example on operative competency.

(c) **Provision of information**

(i) GTs should put processes in place to provide pressure information to MAMs and OAMIs (in accordance with current Regulations).

(ii) Services should be labelled with pressure information, including GT delivery pressure, and capacity, to an approved industry labelling standard.

Requirements would need to be in PSR and IGE/TD/4 and IGE/G/2 and is especially important for greater than 75 mbar supply pressure.

As necessary, labelling requirements should be included in CORGI ACS.

(d) **Standards**

There should be new and revised industry standards to cover design, installation, inspection and maintenance, for example on "medium pressure" design and installation.

Special attention should be given to consistency at the interfaces between the Network, the meter installation, installation pipework, and appliances. Of relevance are IGEM GM/series; IGE/G/1; TD/series; BS 6891; IGE/UP series; BS 6400; GS(I&U)R, GS(M)R.

Pre-installation checks should be required, including to check that the pressure at the outlet of the ECV (service) is suitable for the installation.

(e) **Training and competency**

CORGI ACS training and competency should be reviewed and enhanced.

These should be reviewed against updated industry standards and registrants advised of changes to standards. Revised procedures for setting and adjusting and sealing the regulator and associated devices should be included.

(f) **GT Authorisation**

All GTs should have authorisation schemes for MAMs.

GTs should continually audit those authorised to break seals. An assurance that meter type and size to be installed is correct should always be made.

It would be advisable to have more robust authorisation schemes for installations where the consequences of an incident, for example for hospitals, offices and blocks of private dwellings, could be especially serious.

(g) **Review of legislation**

(i) GM(C&D)R should be reviewed.

(ii) The GT responsibility for pressure management should be clarified in legislation.

(iii) The legal framework should be clarified to recognise the existence and duties of MAMs and MOs.

(h) **DIY**

DIY installation should be discouraged by effective communication of legal obligations. Consideration should be given to banning DIY meter installation work.

11 ACRONYMS

ACS	Accreditation scheme.
AIGT	Association of Independent Gas Transporters.
AMO	Association of Meter Operators.
DIY	"Do it yourself".
ECV	Emergency control valve.
GS(D)	Gas supplier (domestic).
GS(ND)	Gas supplier (non-domestic).
GT	Gas transporter.
HSE	Health and Safety Executive.
IGEM	Institution of Gas Engineers and Managers.
LP	"Low pressure".
MAM	Meter asset manager.
MAMCoP	Meter Asset Manager Code of Practice.
MP	"Medium pressure".
NGT	National Grid Transco.
OAMI	Ofgem Approved Meter Installer.
Ofgem	Office of Gas and Electricity Markets.
POPMAR	The policy, organising, planning/implementing, auditing, measuring performance and reviewing performance.
QMS	Quality management system.
RGMA	Review of gas metering arrangements.
SBGI	Society of British Gas Industries.
TA	Trade association.
TISG	Technical Issues Sub-Group.

APPENDIX 1: TERMS OF REFERENCE

Gas Meter Competition Risk Assessment - Expert Review Panel
Draft Terms of Reference provided by Ofgem

Methodology and Scope

- To undertake an objective and independent assessment of the risk, if any, associated with emerging competition in the provision of metering services for gas meter installations. Without prejudice to this general objective, due weight should be placed on assessment of risk (and consequences) in allowing the competitive provision of' the complete meter installation (meter and pressure regulator) rather than solely, the meter.

- To apply a structured, open and systematic approach in the assessment, following established principles, including risk elimination where possible, rather than reliance on engineering or management systems.

- To base the assessment on a full and open analysis of risks, not constrained by the work done so far by the Technical Issues Sub-group (TISG), e.g. on the MAM Code of Practice. Due weight should be placed on safety management and human factors ('software') as well as ('hardware') issues.

- The assessment should include, *but not be restricted to* the issues in the Annex.

- To undertake the risk assessment in three stages:

    - Stage A: To identify the baseline risks that existed before competition in gas metering began to emerge (i.e. when all metering installations were installed, operated and owned, by British Gas and subsequently gas transporters, primarily Transco plc)

    - Stage B: To identify risks that occur as a result of increased competition in gas metering. This shall be based on the current market developments such as the British Gas competitive tender process and the planned implementation of the industry-wide RGMA business processes and dataflows.

    - Stage C: A gap analysis to determine the difference in risk between that in the 'baseline' (regulated) environment and the competitive market.

Membership

Chair:	IGEM
Panel Experts:	1 x Transmission 1 x Distribution 1 x Metering 1 x Appliances and Utilisation
Observer and Panel Support:	Ofgem

IGEM GAS METER COMPETITION RISK ASSESSMENT REPORT

Deliverables

- To produce an objective and independent written report, which assesses the change in risk, if any, associated with emerging competition in the provision of metering services for gas meter installations. The report should comprise the following:

  - Stage A: Determine pre-competition baseline risks

    To create a benchmark in which to determine the level of risk pre-competition.

  - Stage B: Determine change of risk due to competition in gas metering services

    Analysis will be undertaken of the risks associated with competition in gas metering competition. This would address areas covered in Stage A and any additional issues identified in the context of the new environment.

  - Stage C: Gap analysis between current and proposed approach to the provision of metering services.

    The predicted risks from metering competition (including specific reference to the increased risk from including the regulator in the liberalisation process) should be compared with the legacy services and gaps identified.
    Supporting evidence should be provided for conclusions drawn and control measures recommended where appropriate to minimise risks, including reference as necessary to the proposed meter Asset Managers Code of Practice (MAMCoP) and associated registration scheme.

    It is anticipated that the output from this project will be in the form of a comprehensive technical report.

Timescales

There is a high priority emphasis placed on this work. Ideally the report should be available within 10 weeks of the project start date. This timescale will be confirmed by the panel four weeks into the project.

Annex

Examples of areas to be included in Risk Assessment

1. The risk assessment process needs to identify and address the relevant issues for securing the safe management of a meter installation throughout its life cycle. The 'Policy', 'Organising', 'Planning/Implementing', Auditing', 'Measuring Performance' and 'Reviewing Performance (POPMAR) framework at each stage of the life cycle should be used (see HSE Booklet HS(G) 65 'Successful Health and Safety Management') would be a suitable model to be applied.

2. The assessment should identify any additional risks that would occur compared to the 'baseline') as a result of increased competition in gas metering, with due weight on effect of including the regulator in the unbundling process. It should fully examine both 'hardware' and 'software' issues, and should differentiate as necessary between domestic and non-domestic (commercial and industrial) situations where risks, control and mitigation measures are different; both sectors should be examined.

3. Without prejudice to the generality of the assessment it should include the following:

Controls on specification, procurement etc.

- Comparison of controls (and on whom they are placed) with regard to specification (standards), procurement, availability, installation and adjustment of the meter/regulator and associated risks and consequences

- As a subset of the above, the risk of incompetent or unscrupulous people carrying out DIY installation/adjustment of meters/regulators, taking into account changes in market structure, its influence on availability of metering components for DIY and incentives that could encourage 'private' ownership and DIY work.

- Changes in risk and consequences that arise from increased gas supply pressure (both in LP and the increased number of MP).

Management issues

- Competence of those who do the work and manage the process.
- Communication issues (e.g. transfer of information between potentially disparate parties, e.g. contractors, subcontractors etc.)
- Control of those who do the work and manage the process.
- Control and clarity of responsibilities, i.e. who is responsible for what?
- Control of contractors/subcontractors.
- The above should include a comprehensive examination of 'change management' issues, including change of MAM, conveyor, configuration etc.

Human factors

- This should include both 'mistakes' and 'violations', for instance incentives for taking short cuts and how they can be prevented.

Gas Conveyor's compliance with Gas Safety Management Regulations (Schedule3, Part 1)

The assessment should take account of interactions between the 'regulator issue' and the duty to ensure suitable pressure to secure safe operation of appliances. The following (what if?) scenarios provide examples (non exhaustive) of issues to be addressed:

- GT/conveyor supplies over-pressure at the end of the network.
- GT/conveyor does not supply sufficient pressure at the end of the network.
- Meter installer incorrectly sets regulator.
- Meter installer installs regulator that is not suitable.
- Faults (e.g. in design, operation) of the regulator occur and not found or addressed.
- Meter installer does not follow (intentionally/by error) 'approved', accepted working methods.
- Meter bypass installed allowing un-regulated supply.
- Incorrect flow of information (conveyor/other).

APPENDIX 2: FINALISED PANEL CONSTITUTION AND MEMBERSHIP

CHAIRMAN	Dr Bob Harris	Nominated by IGEM
SECRETARY	Keith Nixon	Nominated by IGEM
GAS FORUM	Paul Jacques	Centrica plc
SBGI	Jim Harrington Tucker	Independent consultant nominated by the SBGI
METER INSTALLATION EQUIPMENT MANUFACTURER	Trevor Billington	Elster Jeavons Ltd
AMO	Steve Brand	United Utilities plc
AIGT	David Sharp	Connect Utilities Ltd
NGTransco (GT Metering)	Murray Paterson	
OBSERVERS/CONSULTANTS	Adrian Rudd	Ofgem
	Andrew Collins	NGT
	Ian Smith	IGEM

APPENDIX 3: COVERING LETTER, BASELINE CASE QUESTIONNAIRE AND GUIDANCE (worked example not included but sample questionnaire page included)

Dear Gas Industry Colleague,

Meter Competition Risk Assessment

You will be aware that as part of the ongoing process to facilitate the introduction of competition in metering services Ofgem have recently issued a draft Code of Practice for Meter Asset Managers (MAMCoP), details of which can be found on the Ofgem website (www.ofgem.gov.uk). In parallel, and in order to address certain safety related concerns, Ofgem have also commissioned The Institution of Gas Engineers and Managers (IGEM) to undertake an assessment of whether there is an increase in safety risks associated with the intended introduction of competition in metering services. To undertake this task IGEM has brought together a representative panel of experts under an independent Chairman.

In order to carry out the assessment in a fair and objective way the panel believes it is right to consult widely, and to seek views from all those who may be involved in the provision of metering services. In particular it has been agreed to compare the current/future arrangements with a baseline case, taken to be the situation which prevailed when Transco was mainly responsible for metering activities, and assess whether the risk profile has changed. The date chosen for the baseline case is the start of the Review of Gas Metering Arrangements (RGMA) Project i.e. August 2000.

In order to capture the views of those involved the panel has developed a questionnaire (copy enclosed) which you are invited to complete and return as soon as possible but no later than 26th January 2004. Your assistance in completing the questionnaire will make a significant contribution towards ensuring that due consideration has been taken of the requirements associated with advancing the liberalisation of gas metering services market.

All responses will be treated in strict confidence. It is not intended to publish or attribute any response received and arrangements have been made to ensure that only the panel secretary will have access to the source of any response. Instructions on completing the questionnaire are included together with a description of the baseline case, but if clarification is required please contact the panel secretary, ****whose contact details are provided on the questionnaire. Once responses have been received the panel will assess them carefully and aims to produce a final report early in 2004 which will be presented to the HSE and Ofgem, and will also be accessible to those who submit a response.

I am sure you will agree that an early resolution of the issues involved in the introduction of competition in metering services will be in the interests of all concerned. By completing and returning the questionnaire you will be helping to ensure that this is the case.

If you feel you are the wrong person in your organisation to deal with this enquiry please accept our apologies and pass it on to the appropriate person.

With many thanks in anticipation of your help and co-operation in completing the questionnaire.

Yours faithfully

****
Chairman
IGEM Gas Metering Competition Risk Assessment Panel

INTRODUCTION

1. Thank you for finding time to complete this questionnaire.

2. The risk assessment aims to compare the current/future arrangements with a baseline case in order to assess whether the risk profile has changed. The baseline is taken to be the situation which prevailed when Transco was mainly responsible for metering activities. Consequently the date chosen for the baseline case is the start of the Review of Gas Metering Arrangements (RGMA) i.e. August 2000.

3. All responses will be treated in the strictest confidence. The sources of responses will be known only to the panel secretary. However to enable us to deal with any queries, maintain a record of responses and inform participants about the final report we would be grateful if you would provide contact details when completing the questionnaire. The number of responses in each type of organisation will be monitored to ensure that we have adequate response rates to reassure the HSE that we have representative views taken from across all industry participants.

4. On the enclosed CD you will find the following two Microsoft Word documents:

(i) The risk assessment questionnaire in four parts:

- Part 1 - Your contact details.
- Part 2 - Details of your organisation.
- Part 3 – The risk assessment itself.
- Part 4 - A brief "worked example".

(ii) The baseline case. You will need to refer to this and it will help you when completing the risk assessment. It has been produced by Transco, and has been prepared to represent identified risks and controls prior to the liberalisation of gas metering services i.e. August 2000.

5. Section J is intended to include DIY work as well as any other uncontrolled work.

6. If you would like clarification on any aspect of completing the questionnaire and/or further information please contact the IGEM panel secretary ***** or by email at *****.

7. Please return the questionnaire (email preferred) to ***** no later than 26th January 2004.

by email to: *****

by post to: *****
c/o The Institution of Gas Engineers and Managers
Charnwood Wing
Ashby Road
Loughborough
Leicester
LE11 3GR
Fax: 01509 283193

PART 1 – YOUR CONTACT DETAILS.

All responses will be treated in the strictest confidence. The sources of responses will be known only to the panel secretary. However, to enable us to deal with any queries, maintain a record of responses and inform participants about the final report we would be grateful if you would provide contact details below.

Name	
Company	
Address	
Telephone	
Email	

PART 2 – DETAILS OF YOUR ORGANISATION.

(a) Type of Organisation

If your organisation falls into more than one of the organisation categories shown below please indicate all categories you are engaged in, but specify only one category of organisation you wish your response to apply to.

Please indicate the type of organisation below:

Type of Organisation	Yes	Response applies to :
Meter Asset Manager		
Shipper		
Gas Transporter		
Gas supplier (domestic)		
Gas supplier (non-domestic)		
OAMI		
Metering equipment manufacturer		
Other (e.g. trade association) – please specify.		

(b) Meter Installation Categories

If your organisation is involved in more than one of the installation categories shown below please indicate all categories you are engaged in, and those to which your response applies.

Please indicate which of the following meter installation categories your organisation is involved in or associated with:

Meter Installation Categories		Yes	Response applies to:
Low pressure domestic installations	$Q_{max} \leq 6$ m^3/h, MOP $\leq$ 75 mbar standard installation		
Medium pressure domestic installations	$Q_{max} \leq 6$ m^3/h, 75 mbar < MOP $\leq$ 2 bar standard installation		
Industrial and commercial installations	6 m^3/h < $Q_{max} \leq$ 1076 m^3/h, MOP $\leq$ 75 mbar standard installation		
All other installations	$Q_{max} >$ 6 m^3/h, MOP $\leq$ 85 bar non-standard installation		

PART 3 – RISK ASSESSMENT QUESTIONNAIRE

Notes for completing Part 3

1. Your organisation may not be involved in all the activities described in the questionnaire. If so please complete the relevant sections and indicate those which do not apply.

2. Against each 'activity' identified in the risk assessment please tick or mark the relevant box to indicate whether you believe the safety risk is likely to increase (+), decrease (-) or remain the same (n/c) with the introduction of competition, relative to the 'baseline case'.

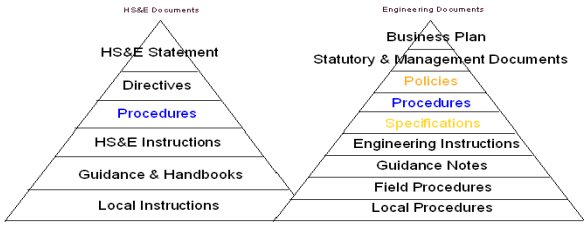
3. Whichever box (+, -, or n/c) you mark, please give a brief description of the reason for your view and describe any existing controls you have in place in the column marked 'REASON FOR +, -, OR n/c & CURRENT CONTROLS'.

4. If you believe the likely risk associated with any activity will increase with the introduction of competition and you have therefore marked box (+) please also suggest any possible further mitigating measure(s), which could reduce the risk involved, in the column marked 'FURTHER MITIGATING MEASURE(S)'.

5. The MAMCoP takes the regulator/governor to be an integral part of the meter installation and therefore to be part of the whole life management of the meter installation. Please bear this in mind when responding.

(BASELINE CASE VERSION ONLY INCLUDED)

Please note that whilst every effort is made to ensure that the information contained within the baseline is correct Transco makes no representation or warranty regarding the accuracy or completeness of the information. Furthermore Transco does not intend, nor recommend, that any person relies on any of the contents of this Document, and therefore Transco cannot accept responsibility, and shall not be liable, for any claims arising (either directly or indirectly) from use of the information contained in the baseline by any person who is the recipient (whether intended or not).

TRANSCO BASELINE CASE – PRE RGMA AUGUST 2000			
ACTIVITY	**RISK**	**CONSEQUENCES**	**CONTROLS**
A. Quality management systems and audit procedures	1. Quality management systems and audit procedures fail to prevent the installation of or identify unsafe meter installations.	1. An inappropriate meter is installed or becomes unsafe in operation leading to consequences 2, 3, 4 & 9.	1. Transco as a major integrated gas transporter (GT) has an asset base of typically 20 million gas supply meter installations distributed within the gas supply areas of the United Kingdom. As a Gas Transporter (PGT), Transco has specific duties under the Gas Act, the Health and Safety at Work Act and associated gas safety regulations with respect to the provision, design, construction, installation, operation and maintenance of gas supply meter installations. In order to satisfy these duties and any other statutory obligations, Transco has developed an HS&E MANAGEMENT SYSTEM, which comprises the Transco Engineering Requirements Manual (TERM) and the Health, Safety and Environmental Requirements Manual. TERM defines the mandatory policies, procedures and specifications for all engineering activities. The manual also describes the processes for creating and amending all documents and outlines the procedure for obtaining authorisation for deviating from the requirements in specific circumstances. The HS&E Requirements manual, which closely follows the principles set out in HSG 65, defines directives, procedures and instructions which describe how health and safety should be managed, implemented reviewed and audited. The requirements for periodic management and technical audits of Transco activities and assets, which include gas supply meter installations, are further defined in the Transco Audit Framework Manual. Audits are prioritised on the basis of the assessment and control of risks, including risks to people, the environment, and the business. All audit activities identified shall be audited at least every 5 years. There are close links between engineering documents and health, safety and environment documents. The hierarchy of and interrelationship between engineering documents and health, safety and environment documents is shown in the figure below. 

B. Planning and Design	2. The capacity requirements for the meter point are not correctly identified.	2. The meter installation operates at a flow rate higher than intended and insufficient pressure is available for the safe operation of the gas appliance, ignition could be impaired or the flame extinguished leading to an uncontrolled release of gas, fire or explosion.	2. Transco operates a site work process for new or up rated gas supply infrastructure. The site work process requires the person requesting the infrastructure to specify the maximum flow rate that is required. The maximum flow rate is used when selecting the appropriate meter installation.
	3. The pressure tier from which the gas will be supplied is incorrectly identified.	3. The integrity of the meter installation and/or the consumer's pipework and gas appliances may be impaired. The appliance may operate outside safe operating limits with the possibility of the appliance overheating, being damaged or the flame lifting off leading to incomplete combustion, a CO incident, or fire or fire/explosion.	3. Transco as an integrated business has access to maps, databases and other asset information, which identify the geographical location, design and operating pressure of pipes to which meter installations will be or are connected. The design and operating pressure information is used when selecting the appropriate meter installation.
	4. The pressure required at the outlet of the meter installation is not correctly identified.	4. The integrity of the consumer's pipework and gas appliances may be impaired, cease to function as intended, leak or rupture leading to an uncontrolled escape of gas. The appliance may operate outside safe operating limits with the possibility of the appliance overheating, being damaged or the flame lifting off leading to incomplete combustion, a CO incident, or fire or fire/explosion	4. Useless otherwise advised through the site work process the default pressure, at the outlet of the meter installation, is taken to be 21 mbar. An outlet pressure of 21mbar is consistent with the operating pressure of standard domestic and commercial gas appliances.
	5. The supply arrangements are correctly identified but an inappropriate design of meter installation is selected for the intended duty.	5. As consequences 2,3 & 4	5. Transco has access to or has developed procedures and specifications for categories of meter installations that are suitable for connection to Transco networks and the safe supply of gas to consumer's premises. TERM identifies which procedures and specifications are applicable for specified pressures and capacities.
	6. The detailed design of the meter installation is not correct and/or the appropriate industry standards are not used.	6. As consequences 2,3 & 4	6. Meter installation procedures and specifications documents are developed and approved by persons with the relevant competency who have access to the necessary resources including; UK and European statutory documents, standards and codes of practice, calibration and test facilities, design tools and software and as required expert advice on the selection and use of material, pressure control, metering, and electrical and instrumentation systems that are required in the development and maintenance of the engineering documents. As a part of the development process review and comment is sought from people with the appropriate knowledge and experience and there is a requirement that an appropriate employee involved in the type of work covered by the document must be involved in the development of the document. Transco procedures and specifications are consistent with industry standards and in many cases have been used as a basis for developing industry standards as shown in the annexe.
	7. Incorrect address details are used when planning the installation work.	7. An inappropriate meter installation could be installed at the premises with consequences as 2, 3 & 4.	7. As the development of the quote progresses through the site works process there are a number of check points that verify the address details are correct. When the installation takes place, where possible, engineers will confirm that the correct installation address. Following installation any discrepancies between the address on the work request and the address/location where the meter is physically installed will be updated on the asset database.
	8. The incorrect meter point reference is used at the premises.	8. There is more than one meter reference point at the address and an inappropriate meter installation could be installed at the premises with consequences as 2, 3 & 4.	8. Transco processes ensure that on its database two separate supply points cannot have the same MPRN. At the point of capture of a site works request any duplication or uncertainty regarding which MPRN (i.e. duplicates) the meter is to be installed at will, prior to any work request being issued, be resolved. During installation if it is unclear on site, which supply point a meter installation is to be installed, the engineer will clarify with the responsible person on site. Following installation any discrepancies between the address on the work request and the address/location where the meter is physically installed will be updated on the asset database.
	9. An inappropriate location is chosen for the meter installation.	9. The location may not provide adequate space for meter work, meter reading and the access to the emergency control valve could be impaired. There may be insufficient ventilation, a hazardous atmosphere arises, and there may be an unprotected source of ignition leading to fire or explosion.	9. Procedures TEMP Part 4, Engineering Instruction EI 42, M9 and M7 are utilised to ensure that meter installations are installed in suitable locations.

C. Installation and Commissioning	10. The job instruction incorrectly identifies the location details and meter installation design to be installed or exchanged.	10. An inappropriate meter is installed or exchanged leading to consequences 2, 3, 4 & 9.	10. Transco's site works processes and procedures help ensure that the details and requirements are correctly captured. For Domestic and standard I&C installations standard designs are used. For larger I&C installations site visits are undertaken to determine the locations and installation requirements and information is then used to design, using the relevant Transco specification, a bespoke installation. Staff who undertake the installation on site are suitably competent to identify any inconsistency between the work request and the on site situation and will seek further clarification of the requirements prior to installation.
	11. Operatives are not competent for the category of work	11. The installation is not installed as intended; faulty workmanship arises, leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion or incomplete combustion.	11. Staff who carry out meter work for Transco hold a variety of competency qualifications depending on the type of work that they carry out and have been recognised as competent by either the HSE or CORGI. Staff who undertake medium pressure domestic meter work are assessed for competency following attendance of an Advantica training course covering the installation of medium pressure domestic size meter installations in accordance with EI42. For E&I staff a separate reduced scope qualification has been agreed with Corgi to allow staff to connect and disconnect converters and flow computers. To support engineers in the field there is an extensive support structure in place. Line managers will deal with most queries that arise and engineers, who support each LDZ, are able to offer advice on technical matters. Any technical issues, which require further guidance, can be directed to these engineers.
	12. Adequate safe controls of work are not available or used e.g. isolation of gas and electricity supplies.	12. An unsafe situation develops during installation or exchange leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion.	12. Transco has and operates Safe Control of Work Procedures, T/PR/SCO1, which requires an assessment to be made on the risks to the safe and secure supply of gas prior to work being undertaken. In some instances routine and non-routine procedures must be written and approved before work is undertaken. T/PR/SCO1 permits work to be undertaken where there are approved procedures. Typically domestic and commercial meter work is undertaken using TEMP Part 4, EI42, & M9. ,
	13. Pre-installation checks not done	13. Similar to those associated with Risks 3&9.	13. Transco requires the competent installer to undertake a specific risk assessment before undertaking work; this would include an assessment of the workplace and the pipes/ECV to which the meter installation will be or is connected and to test that no electrical potential (voltages) is present on any metallic components within or within the vicinity of the workplace.
	14. The gas fittings used are not suitable/incorrect materials are used.	14. As consequences 3, 4, 9 & 11.	14. All of the components used in the domestic and I&C meter installations are technically governed by TERM specifications and procurement procedures. Specifications are reviewed on a quarterly basis between Senior Officers in Transco and the Technical Engineers and Scientists at Advantica. Each specification is also reviewed prior to being issued for tender by the project team established to manage the tender process. Inevitably, greater resource will be allocated to the tendering of a meter than the tendering of the meter bracket; however, the principle is consistent. All products require approval prior to being purchased and the Transco procurement system would prevent the purchase of a stock item, being ordered as a non-stock item, which does not meet the specification. Once specific products are approved they are continually monitored by Quality Advisers. These Quality Advisers input into the creation of each specification, evaluate the tender submission for compliance and audit the successful tenderer to ensure ongoing compliance. The level of audit would vary depending on the criticality of the commodity, but would normally be a minimum of two audits per year for a meter supplier. These audits form part of the supply contract key performance indicators and the management of this process forms part of the Procurement and Logistics key performance indicator to Transco. All metering installation materials used by Transco staff are issued via the logistics supply chain. Any item within the stock system is identified by a catalogue code, and the creation of a catalogue code is governed by the Procurement and Logistics procedures. These procedures ensure that if a metering item is placed on stock, it will meet the required specification as determined by the tender process and the ongoing product specification audits.
	15. The installation procedure is not correct.	15. As consequences 3, 4 & 11.	15. See controls 1 & 6.
	16. Gas fittings and ancillary equipment is not inspected and tested correctly e.g. tightness testing.	16. As consequence 11.	16. See controls 6 & 11.
	17. The meter regulator and any associated pressure control and protection devices are not set at the correct pressures and/or are not appropriately sealed.	17. As consequence 4.	17. See controls 6 & 11.

	18. Appropriate safety labels not fitted.	18. The gas users or any persons undertaking subsequent work on the meter installation or on consumer's installation will not be provided with safety information. The meter installation is not made safe in an emergency, the capacity of the meter installation is exceeded by the use of additional gas appliances, and the meter outlet pressure is not suitable for the gas appliance leading to consequences 2, 3 & 4.	18. See controls 6 & 11.
	19. Connection and Disconnection notifications are not made.	19. Asset records are not maintained, the existence of the meter installation is not known, the meter installer cannot be identified, ongoing meter operation & maintenance activities are not carried out, gas fittings with known defects cannot be easily traced and replaced.	19. See controls 6 & 11
D. Operation	20. The pressure at the inlet of the meter installation is greater than the installation design inlet pressure.	20. As consequence 3	20. As a Gas Transporter having duties under the GS(M)R, PSR and PSSR Transco has and has developed, under the HS&E MANAGEMENT SYSTEM, engineering documents for the design, operation, maintenance and inspection of pipes which comprises it's networks. Transco's engineering documents follow and in most cases adopted the principles set out in IGE/TD/1 (Pipelines) and IGE/TD/9 &IGE/TD/10 (Pressure reduction installations) and should ensure that the maximum operation pressures of pipes are not exceeded in normal operation and that the maximum incidental pressure that may occur under fault conditions does not exceed stated values
	21. The pressure at the inlet of the meter installation is lower than that for which the meter installation was designed.	21. The meter installation operates at a pressure lower than intended and insufficient pressure is available for the safe operation of the gas appliance, ignition could be impaired or the flame extinguished leading to an uncontrolled release of gas, fire or explosion.	21. In addition to control 20 Transco, as one of it's license obligations, is required to design and maintain (reinforce) it's networks to ensure that sufficient capacity is a available to meet a 1 in 20 year peak gas demand and at this pressure ensure that a known minimum pressure will occur at the outlet of the emergency control valve. (On low pressure networks, from which typically > 95% of gas supplies are taken the minimum design pressure is 19mbar.)
	22. The flow of gas through the meter installation exceeds that for which the meter installation was designed.	22. As consequence 2.	22. On new fix installations, Transco will fit the size of meter appropriate to the load stated. Transco do not commission new appliances and therefore meters are sealed at the outlet on new installations. A suitably qualified Corgi engineer will connect the appliances to the meter installation and should notify Transco if the connected load is too large or a suitable meter outlet pressure cannot be achieved. For Domestic sized meter exchanges, guidance is given in T/PR/TMP3 on the sizing of gas meters. For I&C installations there is a requirement to check the meter differential pressure during maintenance works. This would indicate if there was a potential problem with the sizing of the meter. *In addition to control 2 the Transco Network Code and the associated Site Work process provide a means whereby the capacity of a meter installation can be reassessed and if necessary the meter installation upgraded should the requirement for gas flow exceeds that of the existing meter installation. Engineering documents also provide a means whereby the gas load of installed gas appliances and the appropriate capacity of meter installation can be determined. e.g. T/PR/TMP3 Metering Procedures For The Installation, Exchange and Removal of Low Pressure Gas Meters Not Exceeding 6 m3/h.*
	23. Unauthorised work is undertaken on the meter installation.	23. The installation is not maintained in the condition intended; faulty workmanship arises, leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion or incomplete combustion.	23. Transco will only employ persons having the appropriate competency to undertake work on meter installations.
	24. An unauthorised person breaks the seal on the meter regulator or any associated pressure control and protection device and changes the authorised operating settings.	24. The pressure at the outlet of the meter installation exceeds that intended and the consumer's installation and gas appliances may operate outside safe operating limits leading to consequence 4.	24. The employment of appropriately competent persons and procedures mitigates this risk. For meter installations with inlet pressures exceeding 2 bar Transco has (PSSR) records systems where the settings pressure protection and pressure control devices are specified.
	25. An Authorised person breaks the seal on the meter regulator or any associated pressure control and protection device and sets the devices at an incorrect pressure.	25. As consequence 24.	25. As an integrated gas transporter and main provider of meter installations there is a single employer responsible for gas pipes and meter installations. With Transco there are management accountabilities for the management, operation and maintenance of meter installations. The interface with the gas user is taken to be the outlet of the meter or meter installation pipework outlet valve.

	26. Operational responsibilities not identified or understood.	26. Work is undertaken on the meter installation, other than by the intended persons and faulty workmanship or the incorrect setting of the meter regulator and any associated pressure control and protection devices arises leading to consequences 4 & 11.	26. As an integrated gas transporter and main provider of meter installations there is a single meter installation owner/operator who is responsible for the meter installation. Transco meters are marked showing the owner to be Transco. In addition the statutory "smell gas" label directs the gas user to the Transco Emergency Call Centre.
	27. Contact arrangements with the meter operator are not available to the gas user.	27. The meter operator is not known and any defects or deficiencies in the meter installation and categorised as "at risk" are not resolved leading to an uncontrolled escape of gas, fire or explosion.	27. Transco HS&E and engineering documents minimise the risk of an unsafe event when Transco undertakes meter work. Should an unsafe event occur on or downstream of the Transco meter installation the statutory " smell gas" label directs the gas user to the Transco Emergency Call Centre and how using the emergency control valve the installation can be made safe. There is a legal obligation (GS(M)R) for Transco to attend a public reported gas escape within 1 hour. Transco regularly reinforces gas safety messages through the media.
	28. An unsafe event associated with the meter installation or the consumer's installation or gas appliance occurs during operation.	28. As consequence 3	28. See control 26.
	29. The meter installation operation is not consistent with any safe controls established by the gas transporter.	29. Unauthorised work is undertaken on the meter installation, suitable isolations are not made, leading to an injury, uncontrolled release of gas fire or explosion.	29. See control 26.
	30. The meter installation operation is not consistent with any safe controls established by the gas user.	30. As consequence 29.	30. See Control 26.
E. Maintenance and inspections.	31. The job instruction incorrectly identifies the location details and meter installation on which maintenance is intended.	31. The meter installation is not maintained or inappropriate maintenance work is attempted or undertaken. The physical condition and /or the functional performance of the meter installation deteriorates leading to an unsafe situation, danger from pressure, electricity, an uncontrolled release of gas fire, explosion, incomplete combustion and CO incident.	31. Following installation any discrepancies between the address and installation location details are updated on Transco databases. Transco operates a number of systems and databases, supported by policies and procedures that identify and schedule meter maintenance.
	32. Operatives are not competent for the category of work.	32. The installation is not maintained as intended; faulty workmanship arises, leading to an unsafe situation, danger from pressure, electricity, and an uncontrolled release of gas fire, explosion, incomplete combustion and CO incident.	32. See control 11.
	33. Adequate safe controls of work are not available or used e.g. isolation of gas and electricity supplies.	33. An unsafe situation develops during the maintenance or inspection activity leading danger from pressure, electricity, or uncontrolled meter outlet pressures with the consequences of injury fire, explosion, incomplete combustion and CO incident.	33. See controls 12 &13.
	34. Statutory inspections are not carried out. E.g. DSEAR, PSR, PSSR.	34. As consequence 32.	34. Transco uses a maintenance and inspection management system (MIMS) to schedule statutory inspections arising under PSR and PSSR and maintenance inspections of electrically protected and certified apparatus and systems to ensure that the safety requirement are consistent with the certificate. The maintenance of meter installation assets are defined in engineering documents T/PR/Maint9 Procedure For The Maintenance Of All Gas Supply Meter Installations On The Transco Network For Pressures Not Exceeding 7 Barg and T/PR/ Maint2 Maintenance Procedure for Pressure Regulating Installations. Where there is a scheduled maintenance requirements Transco uses a maintenance and inspection management system (MIMS) to schedule work. Some meter installations are deemed as not requiring routine maintenance e.g. low pressure domestic, industrial and commercial diaphragm meter installations. In such situations alternative controls are in place to ensure that evidence of the condition of the asset is captured and as required appropriate remedial actions are taken. E.g. meter returns processes where meters removed from service are leak tested and the registration verified before any return to service. Transco also operates a fault reporting system (see note 37) which helps identify products which may require some form of corrective action See control 35.

	35. No planned preventative maintenance is undertaken	35. As consequence 32	35. Transco procedure T/PR/FAULT1 Procedure for the Reporting and Analysis of Faults on Gas Transmission and Distribution Assets defines the requirements for fault reporting and fault data analysis. Fault data on domestic, industrial and commercial meters and meter products are routinely collected and analysed and as necessary corrective actions for asset types is taken. Faults identified during routine maintenance are either resolved at the time of maintenance or remedial work planned. Transco Emergency Service attends to faults associate with the escape of gas once the meter installation has been made safe or remedial work is planned.
	36. No planned replacement maintenance is undertaken. e.g. battery replacement.	36. As consequence 32	36. Transco's maintenance procedures are regularly reviewed to ensure that all maintenance work is carried out to a high standard and meets the requirements of manufacturers. Transco has also developed a training course for operatives carrying out meter maintenance. See controls 5, 11 & E&MW work management processes (completing job vouchers)
	37. There are no fault maintenance/repair processes.	37. As consequence 32	37. All meter maintenance activity is recorded on a database developed for the purpose by Transco.
	38. Maintenance and/or repair procedures are inadequate and/or manufacturers' instructions are not followed	38. As consequence 32	38. See controls 5, 11. Additionally Transco has processes and procedures that capture relevant information and is managed, including the recording on appropriate systems, in a manner that facilitates retrieval.
	39. Maintenance and repair is not recorded and/or is not readily available for use.	39. Maintenance, inspection and repair processes, procedures and practices may cease to be appropriate / not address new safety risks leading to consequence 32.	39. See controls 5 & 6. For installations with inlet pressures exceeding 2 bar or installations with electrical apparatus, Transco operates design and network processes for mechanical, electrical and instrumentation
F. Modifications	40. The detailed design of the modification is not correct and/or the appropriate industry standards are not used.	40. As consequences 2, 3 & 4.	40. work, which follow the principles of IGE/GL/5 Plant Modification Procedures.
	41. The modification introduces additional safety risks at the premises.	41. The location may not provide adequate space for meter work, meter reading and the access to the emergency control valve could be impaired. There may be insufficient ventilation, a hazardous atmosphere arises, and there may be an unprotected source of ignition leading to fire or explosion.	41. See control 40.
	42. The job instruction incorrectly identifies the location details and meter installation design to be modified.	42. An inappropriate modification is made leading to consequences 2, 3, 4 & 9.	42. See control 10.
	43. Operatives are not competent for the category of work.	43. The installation is not modified as intended; faulty workmanship arises, leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion or incomplete combustion.	43. See control 11.
	44. Adequate safe controls of work are not available or used e.g. isolation of gas and electricity supplies.	44. An unsafe situation develops during the modification process leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion.	44. See control 12.
G. Provision of information at site	45. Information as to how to make safe or to isolate the meter installation is not available.	45. The gas users or any persons undertaking subsequent work on the meter installation or on consumer's installation will not be provided with safety information. The meter installation may not be made safe in an emergency or when work on the consumer's installation is to be undertaken leading to an uncontrolled gas escape or uncontrolled meter outlet pressures with the consequences of fire, explosion.	45. Transco is both the Emergency Service Provider and the main provider of meter installations and ensures that as engineering documents are developed that the Emergency Service Provider has the opportunity to review and comments on engineering documents and as necessary to review the competency of staff. See controls 1, 6 & 11.

	46. Information on the capacity of the meter installation and the pressures that may occur at the outlet of the meter installation is not available.	46. The capacity of the meter installation is exceeded by the installation and use of additional gas appliances. Any installation pipework or gas appliances subsequently installed may not be suitable for pressures that may occur at the outlet of the meter installation leading to consequences 2, 3 & 4.	46. No general Transco control in place at time of baseline case.
	47. Additional hazard information is not provided to the gas user. E.g. DSEAR.	47. The gas user would not be aware of the presence or extent of any hazard and an unprotected or uncontrolled source of ignition could be or become present in an explosively hazardous zone leading to injury fire or explosion.	47. Transco control in place at time of baseline case. DSEAR came into force December 2002.
H. Removal and De-Commissioning	48. The removal, decommissioning and ECV isolation and blanking procedures are not correct and/or the appropriate industry standards are not used.	48. The removal, decommissioning and isolation introduce additional safety risks at the premises leading to danger from pressure, electricity an uncontrolled gas escape with the consequences of injury, fire, or explosion.	48. See controls 6.
	49. The job instruction incorrectly identifies the location details and meter installation design to be removed or decommissioned.	49. The incorrect meter installation is removed and inappropriate procedures are used leading to danger from pressure, electricity an uncontrolled gas escape with the consequences of injury, fire, or explosion.	49. Where the on site details do not match the job request details the engineer should seek clarification. See control 7.
	50. Operatives are not competent for the category of work.	50. The installation is not removed, decommissioned or isolated as intended; faulty workmanship arises, leading to danger from pressure, electricity an uncontrolled gas escape with the consequences of injury, fire, or explosion.	50. See control 11.
	51. Adequate safe controls of work are not available or used e.g. isolation of gas and electricity supplies.	51. Safety risks are introduced at the premises leading to danger from pressure, electricity an uncontrolled gas escape with the consequences of injury, fire, or explosion.	51. See control 12.
I. Provision and Maintenance of Asset Records	52. Asset records not maintained or not appropriately transferred to any new meter operator/owner.	52. The meter operator/owner /meter asset manager does not have sufficient information to manage the safety risks leading to danger from pressure, electricity an uncontrolled gas escape with the consequences of injury, Co incident, fire, or explosion.	52. The Transco sites and meters database holds some meter asset information typically, meter manufacture, meter model, meter serial number. Transco uses a maintenance and inspection management system (MIMS) to hold some asset information on more complex installations including those subject to PSSR inspections.
	53. Asset records are incomplete or do not record detailed information on the meter regulator, safety system settings, hazardous area classifications, pressure system certificates	53. Insufficient details are available for the operation and maintenance of the meter installation or the consumer's premises leading to consequences 52.	53. Some off line asset information, for example electrical and instrumentation certification is also available. The use of competent persons to undertake meter work would mitigate risks arising from insufficient asset information
J. Uncontrolled work/ work by persons who are not competent.	54. Inappropriate gas fittings are used.	54. See consequences 2,3,4,5 & 6.	54. The Gas Safety (Installation and Use) Regulations require the use of appropriate fittings. Inappropriate fittings that have been installed may be detected by a Transco competent person attending an Emergency call or to undertake planned meter work or should be detected by a person undertaking a safety inspection under the Gas Suppliers Licence Condition 17.
	55. Uncontrolled meters and metering products are available and used by un-authorised or persons who are not competent.	55. See consequences 2,3,4,5 & 6.	55. For new meters and new meters products see control 14. Where Transco removes a meter or a meter product it is either; returned to a manufacture for refurbishment and is returned to stock for installation or scrapped using controlled disposal procedures, which can include making components unsuitable for use e.g. spiking meters.
	56. Industry standards are not used.	56. See consequences 2,3,4,5 & 6.	56. Inappropriate installations may be detected by a Transco competent person attending an Emergency call or to undertake planned meter work or should be identified by a person undertaken a safety inspection under the Gas Suppliers Licence Condition 17.

	57. The Gas Meter (information on Connection and Disconnection) Regulations forms are not provided to the Gas Supplier or Gas Transporter.	57. The installation and use of a meter installation is not known to licence holders. Gas supplier licence Condition 17 to make safety inspections and to provide information to gas transporters regarding the disconnection of gas service pipes, Condition 14 could not be satisfied.	57. No direct control by the Transco meter operator. Transco as the gas transporter may identify that there is no registered gas user (Gas Shipper) at the supply point/meter reference point and initiate a disconnection of the supply of gas.

Annexe to Control 6

Transco documents			*Equivalent industry standards*		
			Shaded cells indicate that the standard has been derived from the parent Transco document.		
Reference number	Title	Date	*Reference number*	*Title*	*Date*
Transco Emergency and Meterwork Procedures	TEMP Part 4 The installation of domestic size gas meters (Low Pressure)	November 1995	*BS 6400:1997*	Specification for Installation of domestic sized gas meters (2nd and 3rd family gases)	*1997*
	TEMP Part 6 Purging and Testing	November 1995			
T/SP/PRS3 Issue 2	Product Specification For Meter Regulators For Gas Flow Rates Not Exceeding 6 m³/h and Inlet Pressures Less Than 75 Mbar	April 1995			
T/SP/PRS6 Issue 3	Product Specification For semi-Rigid & Flexible Meter Connectors	April 1998			
T/SP/PRS8 Issue 2	Product Specification for Domestic Meter Boxes	October 1999			
EI42	Medium Pressure (MP) Domestic Meter Regulator Installations	December 1999	*BS 6400:1997*	Specification for Installation of domestic sized gas meters (2nd and 3rd family gases)	*1997*
PRS29	Product Specification for Meter Regulators with inlet pressures in the range above 75 mbar to not greater then 4 bar for nominal flowrates not exceeding 6m³/hr.	September 1999			
M9	Technical specification for non-domestic metering installations	May 1996	*IGE/GM/6*	*Specification for low pressure diaphragm and rotary displacement meter installations with badged meter capacities exceeding 6 m 3 /h (212 ft 3 /h) but not exceeding 1076 m 3 /h (38000 ft 3 /h)*	*1996*
PRS33	Product Specification For Low Pressure Meter Regulators Of Nominal Diameter Greater Than Or Equal To 1¼ Inch And For Inlet Pressures Up To 75 Mbar	March 2000			
M7	Requirements for industrial and commercial metering installations (inlet pressures not exceeding 7 bar gauge)	March 1982	*IGE/GM/1 Edition 2*	*Gas meter installations for pressures not exceeding 100 bar*	*1998*

APPENDIX 4 : FURTHER PANEL OBSERVATIONS

Further Panel observations, rather than recommendations, are provided in Appendix 4.

The majority of these observations are drawn from the responses to the questionnaire. The Panel has analysed these and included them if appropriate.

- the area of risk (A to J)
- the mitigation measure
- the area where the mitigation takes place e.g. OFGEM. In some instances, there may be more than one option, but the most obvious is identified.

It is recognised that some of the observations may reflect content of the draft MAMCoP, standards etc. that is already in place. Nevertheless, such observations will serve as a reminder not to delete such text during the drafting process.

	CONTENT OF MAMCoP – REFER TO OFGEM TISG
B	MAM to demonstrate the regulator has been reset when the factory seal has been found to be, or is deliberately, broken.
BH	Ensure clarification of location details and design, prior to commissioning, including ECV and meter installation.
H	Reference IGE/UP/1,1A,1B for commissioning/decommissioning.
B	Completion and provision to the user of a suitable meter installation test certificate.
B,C	Appropriate telephone numbers, to maintain communication and for emergencies, to be available during work on site.
B	Ideally, use standard designs (to IGE/GM/6)and have "non-standard" designs (to IGE/GM/8) "approved" including working to IGE/GL/5.
B	Do not issue temporary MPRNs. Issue a MPRN for any new service.
I	Need a single industry data base of installations
	GAS SUPPLIERS LICENCE CONDITIONS – REFER TO OFGEM
D	Educate consumer of RGMA when undertaking work for consumers, on GM(C&D)R.
D	Advise consumer to contact ESP in an emergency, otherwise contact supplier.
	INDUSTRY STANDARDS – REFER TO IGEM – BSI
B	Publish load estimation formulae for non-domestic loads.
	GS(M)R – REFER TO HSE
D	ESP to report instances of an unsafe installation or tampering, to registration body for action if necessary.
G	For existing installations removed under alternative ownership arrangements, require the installation by the GT of a single ECV prior to installing the replacement meter installation.
J	GT to monitor services not having a meter installed downstream (supplier to then arrange removal).

APPENDIX 5 : REVISION OF LEGISLATION AND STANDARDS