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Gas Legislation Guidance
IGE/GL/3

Communication 1628

GAS SUPPLY EMERGENCY PROCEDURES



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The Institution of
Gas Engineers

Founded 1863
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Patron
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SECTION 1 : INTRODUCTION

- 1.1 This Guidance is set out against a background of legislation in force in Great Britain at the time of publication. Similar considerations are likely to apply in other countries and reference to the appropriate national legislation will be necessary.
- 1.2 This document is part of a series of Institution of Gas Engineers publications providing practical guidance to support the Gas Safety (Management) Regulations (GS(M)R)1996 and the Pipelines Safety Regulations 1996.
- 1.3 The Gas Safety (Management) Regulations 1996 and the Approved Code of Practice on Design, Construction, and Installation of Gas Service Pipes, made under the Health and Safety at Work etc. Act 1974 and the latter in support of the Pipelines Safety Regulations 1996, follow on from the Health and Safety Commission's Report Britain's Gas Supply: A Safety Framework, published in March 1995. That report was prepared at the request of the Department of Trade and Industry and the Office of Gas Supply as a response to their Consultation Document Competition and Choice in the Gas Market, published in May 1994. The Commission's report was accepted by the Government. It set out the fundamental principles essential to creating a new framework for the control of gas safety in a fully liberalised gas market. The new framework was designed to ensure that existing safety standards were maintained and, as far as possible, to provide a basis for improving standards in line with the knowledge and technology of the day.
- 1.4 This Guidance has been prepared with the active participation of transporters, shippers, suppliers, consultants and the Health and Safety Executive (HSE). It provides guidance on the procedures to be used in the event of a potential or actual national or local supply emergency.
- 1.5 The principles of sound health and safety management should be taken fully into account, to ensure that the system can be operated safely and effectively. Reference should be made to the Management of Health and Safety at Work Regulations 1992. Guidance on these principles is set out in the Health and Safety Series booklet HS(G)65.
- 1.6 The relevant parts of this document may be cited in the transporter's safety case, but HSE will need to satisfy itself that they are appropriate and have been properly applied in each case.
- 1.7 The primary responsibility for compliance with legal duties rests with the employer. The fact that certain employees, e.g. "responsible engineers", are allowed to exercise their professional judgement does not allow employers to abrogate their primary responsibilities. Employers must:
- (a) have done everything to ensure, so far as is reasonably practicable, that there are no better protective measures that can be taken other than relying on the exercise of professional judgement by "responsible engineers"
 - (b) have done everything to ensure, so far as is reasonably practicable, that "responsible engineers" have the skills, training, experience and personal qualities necessary for the proper exercise of professional judgement
 - (c) have systems and procedures in place to ensure that the exercise of professional judgement by "responsible engineers" is subject to appropriate monitoring and review
 - (d) not require "responsible engineers" to undertake tasks that would necessitate the exercise of professional judgement that is outwith their competence. There should be written procedures defining the extent to which "responsible

engineers" can exercise their professional judgement. When "responsible engineers" are asked to undertake tasks which deviate from this they should refer the matter for higher review.

1.8 Notwithstanding Sub-Section 1.7, this Guidance does not attempt to make the use of any method or specification obligatory against the judgement of the responsible engineer. New and improved practices may be adopted prior to this Guidance being updated. Amendments to this Guidance will be issued when necessary and their publication will be announced in the Journal of the Institution and other publications as appropriate.

1.9 The document makes use of the terms "should", "shall", and "must" when prescribing particular procedures. Notwithstanding Sub-Section 1.8,

- (a) The term "should" prescribes a procedure which, it is intended, will be complied with unless, after prior consideration, deviation is considered to be acceptable.
- (b) The term "shall" prescribes a procedure which, it is intended, will be complied with in full and without deviation.
- (c) The term "must" identifies a requirement by law in Great Britain at the time of publication.

Such terms may have different meanings when used in legislation, or HSE ACOPs or guidance, and reference needs to be made to such statutory legislation or official guidance for information on legal obligations.

1.10 Requests for interpretation of this Guidance in relation to matters within its scope, but not precisely covered by the current text, should be addressed to the Secretary, The Institution of Gas Engineers, 21 Portland Place, London W1N 3AF. Such requests will be submitted to the relevant Committee. Any advice given by or on behalf of the Institution of Gas Engineers does not imply acceptance of any liability, nor does it relieve any party of their statutory obligations.

SECTION 2 : SCOPE

- 2.1 This Guidance outlines the procedures to prevent a supply emergency from occurring and to deal with such an emergency if it does occur. Types of supply emergencies covered are:
- local, affecting one transporter
 - local, affecting more than one transporter
 - network, affecting one transporter
 - network, affecting more than one transporter.
- 2.2 This Guidance provides advice on the arrangements and agreements to be established between transporters and the Network Emergency Co-Ordinator [NEC] and those defined in GS(M)R, Regulation 6, to ensure safe management of the affected part of the network in a supply emergency.
- Any relevant arrangements and agreements made must be described in the transporter's and NEC's safety case.
- Note: Any changes to the arrangements and agreements that would render the safety case materially different from the current version accepted by the HSE must be re-submitted to, and accepted by, the HSE, prior to their implementation.*
- Furthermore, any arrangements and agreements drawn up in accordance with this Guidance shall be consistent with the current version of the NEC safety case.
- 2.3 This Guidance describes the arrangements for the principal transmission and distribution network in Great Britain. For other networks, the general principles will need to be applied appropriately.
- 2.4 This Guidance does not include procedures for dealing with gas escapes. Guidance on this subject is contained in IGE/SR/20*.

* Safety Recommendations IGE/SR/20 Dealing with reported gas escapes

SECTION 3 : SECURITY AND INTEGRITY OF THE SUPPLY SYSTEM

3.1 For all supply emergency strategies and decisions, the first priority shall be to attempt to maintain the minimum safe operating pressure in the network through the use of supply and demand-side measures, as appropriate, for example seeking more gas, load shedding, re-routing etc.

3.2 The measures set out in Sections 5 to 7 may be used, as appropriate, to prevent or deal with a supply emergency.

Where it is not possible to maintain supply, the minimum possible parts of the network shall be shut down safely.

Note: The level of shutdown will depend upon the requirement to contain the emergency.

3.3 Procedures shall be put in place to ensure safe restoration of supply.

3.4 Details of arrangements must be included in the NEC's and transporter's safety case.

SECTION 4 : DECLARATION AND NOTIFICATION OF A POTENTIAL OR ACTUAL SUPPLY EMERGENCY

For the purposes of this section, a 'supply emergency' includes reference to both a 'potential' or 'actual' supply emergency.

4.1 CRITERIA FOR DECLARATION

The criteria for any declaration of a network or local supply emergency should be defined in the safety case of the NEC or transporter, as appropriate.

4.2 RESPONSIBILITY FOR DECLARATION

4.2.1 Local supply emergency

Any local supply emergency shall be declared by the transporter on that part of the network affected or by the nominated transporter if more than one transporter is affected in which case the nominated transporter should be identified in the relevant transporter's safety case (see IGE/GL/7*).

Note: 'Transporter' should be construed as including the 'nominated transporter' throughout.

4.2.2 Network supply emergency

Any network supply emergency shall be declared only by the NEC.

4.3 NOTIFICATION OF DECLARATION

4.3.1 Local supply emergency

4.3.1.1 The communication arrangements for the initial notification of a local supply emergency should be set out in the transporter's safety case.

4.3.1.2 On declaration of a local supply emergency, the transporter should notify immediately, and as appropriate:

- any other affected transporters
- any other parties, as set out in the safety case.

4.3.2 Network supply emergency

4.3.2.1 The communication arrangements for the initial notification of a network supply emergency should be set out in the NEC's safety case.

4.3.2.2 On declaration of a network supply emergency, the NEC should notify, immediately, transporters in the network who, in turn, should notify the following in accordance with the relevant Network Code:

- storage operators
- shippers
- suppliers
- terminal operators
- any other parties as set out in the safety case.
- **Gas Legislation Guidance IGE/GL/7 Safety Cases**

4.3.3 Confirmation and verification

The initial notification of any supply emergency should be followed by confirmation and verification of the information as set out in Section 12. Details of arrangements for such confirmation and verification should be set out in the safety case.

4.4 CONTROL

4.4.1 For a local supply emergency, the NEC should not be involved and the transporter should decide the necessary actions to be taken.

4.4.2 For a network supply emergency, the NEC should be in overall control and direct the transporter(s) to take appropriate action. All parties shall co-operate and how this is to be achieved must be set out in the transporter's and NEC's safety case.

4.5 NOTIFICATION OF THE END OF A SUPPLY EMERGENCY

4.5.1 When a local supply emergency has ended, the transporters should notify the parties identified in clause 4.3.1.2.

4.5.2 When a network supply emergency has ended, the NEC should notify affected transporters.

4.5.3 Arrangements for notification of the end of a supply emergency shall be set out in the respective safety cases and the relevant Network Code(s).

SECTION 5 : MAXIMISING AVAILABLE GAS SUPPLIES

If appropriate, transporters should seek deliverable gas supplies necessary to maintain, or ensure a return to, normal network operating conditions.

Methods of maintaining gas supply include:

- use of stored gas
- use of contracted gas
- use of uncontracted gas
- use of 'out of specification' gas as permitted by GS(M)R
- re-routing existing supplies.

These methods of preventing, or dealing with, supply emergencies can be used on their own or in conjunction with the methods outlined in Sections 6,7 and 8.

SECTION 6 : SHEDDING OF INTERRUPTIBLE LOADS UNDER POTENTIAL OR ACTUAL SUPPLY EMERGENCY CONDITIONS

This section deals only with shedding that is initiated by a transporter.

6.1 PROTOCOL

6.1.1 Shedding of interruptible loads can be used following the declaration of a potential or actual supply emergency and within the constraints of the relevant Network Code and in accordance with the GS(M)R - Regulation 6(4).

Arrangements for shedding should be specified in supply contracts with interruptible consumers and these arrangements should be reviewed frequently.

Note: A direction, under GS(M)R, will, normally, be for the immediate (emergency) shedding at an interruptible supply point. This may prevent the supply emergency escalating further i.e. to shedding of firm loads.

Arrangements should be in place to ensure interruptible consumers are made aware of the action they should take. Where a direction is made under GS(M)R, Regulation 6(4), consumers should be made aware of this and that they have a legal obligation to comply. These arrangements should be set out in the transporter's safety case.

6.1.2 Transporters should obtain (from shippers), record and maintain the following data on interruptible supply points:

- location
- maximum demand
- emergency contract names and telephone numbers.

Transporters should have procedures in place to manage shedding. Such procedures should be set out in the transporter's safety case, and they should be kept up to date.

6.1.3 The decision on the location, amount and duration of emergency shedding should be at the discretion of the transporter and should be the minimum necessary to meet the shortfall in gas available.

Note: The transporter can direct which interruptible supply point should be shed to achieve a reduction in the most efficient manner. Normally, this can be effected by shedding the largest supply point first. When reduction of consumption is directed and where the aggregate quantity of interruptible load, but not the exact location, is important, the shipper may decide which supply point to shed.

6.2 COMMUNICATIONS

There should be adequate arrangements in place to enable the NEC, transporters, shippers, suppliers and consumers to communicate with each other, as appropriate, at all times (see Section 10). Backup communications should be used where direct communication cannot be achieved. These arrangements should be set out in the transporter's safety case.

6.3 PROCEDURE

6.3.1 If shedding of interruptible loads is to be implemented, shedding shall be effected by the relevant transporter.

6.3.2 Where the transporter itself is to contact consumers, such consumers shall be contacted and instructed to stop taking gas as soon as practicable.

6.3.3 Where the transporter contracts a third party to contact consumers, the party shall implement the following procedure:

- confirm receipt of message and instruction from the transporter
- contact such consumers and instruct them to stop taking gas as soon as practicable
- provide frequent progress reports to their transporter, until all consumers required to stop taking gas have confirmed that they have complied with the direction.

The timing for confirmation of receipt of message and progress reports, and the form of the information passed, should be agreed between the third party and transporter. The arrangements should be set out in the transporter's safety case.

If the third party cannot be contacted within the agreed time, the transporter should contact the interruptible consumer direct and give instructions to stop taking gas. The interruptible consumer should be made aware of this contingency arrangement by the supplier and should act accordingly if contacted.

6.3.4 Transporters should collate progress reports frequently and monitor their system to ensure that sufficient shedding is taking place to meet the shortfall of gas. This information should be passed to the NEC or other transporters, as appropriate.

6.4 **FORCED ISOLATION**

6.4.1 The transporter should have arrangements in place to verify that interruptible consumers, when requested, have stopped taking gas. If, in the judgement of the transporter, the security of the network, or part of the network, is at risk because a particular interruptible consumer continues to take gas (having been given directions to stop taking gas), they may arrange to physically isolate the interruptible consumer at the service outside the premises.

The shipper should be informed of such forced and physical isolation.

6.4.2 The transporter should try to contact, by all available means, the interruptible consumer in advance of the intended forced isolation to discover the reasons for failure to stop taking gas, and take them into account. For example, a plant may need to shut down slowly for safety reasons. If there is no justifiable reason, the interruptible consumer should be advised (in writing) that forced isolation will take place after a specified time. Although failure to contact an interruptible consumer may not prevent or delay forced isolation, the transporter should take account of the safety consequences of ceasing supply.

6.5 **PROTOCOL FOR RESTORATION OF SUPPLY**

The transporter should advise the shipper, any third party or interruptible consumer, directly and as appropriate, of when restoration of supply can take place. However, it may be necessary to specify the order of restoration in some locations to avoid local operating problems. Wherever possible, restoration priority should be left to the shipper or supplier.

Special arrangements shall be in place for when supply is restored to consumers subject to forced physical isolation (see Section 9).

SECTION 7 : SHEDDING OF FIRM LOADS

This section deals with shedding that is initiated by an NEC or transporter.

7.1 PROTOCOL

- 7.1.1 The aim of shedding of firm loads should be to achieve supply security criteria by the earliest time possible and affecting the minimum number of firm consumers for the least time.
- 7.1.2 It is normal for the shedding of firm loads to take place only after methods such as maximising available gas supplies (see Section 5) and shedding of interruptible loads (see Section 6) have not resolved the potential or actual supply emergency. Thereafter, the NEC or transporter, as appropriate (see Sub-Section 4.4) may direct the immediate reduction or cessation of supply to firm consumers. Such consumers are required to reduce or cease the taking of gas, as directed.
- 7.1.3 Shedding of firm loads can be used following the declaration of a potential or actual supply emergency and within the constraints of the relevant Network Code and in accordance with the GS(M)R, Regulation 6(4). Arrangements should be in place to ensure consumers are made aware of the action they should take. Where a direction is made under GS(M)R, Regulation 6(4), consumers should be made aware of this and that they have a legal obligation to comply. These arrangements should be set out in the transporter's safety case.
- 7.1.4 Transporters shall ensure that priority consumers are clearly advised of their status with respect to any interruption to their supply.
- 7.1.5 Wherever possible, firm loads should be shed in order of decreasing size of load with domestic consumers and priority consumers (see clause 7.5.2) being shed last of all.
- Priority consumers shall, subject to engineering constraints, have their supply maintained for as long as practicable.

7.2 COMMUNICATIONS

- 7.2.1 There should be adequate arrangements in place to enable the NEC, transporters, shippers and suppliers to communicate with each other, as appropriate, at all times (see Section 10). Backup communications should be used when direct communication cannot be achieved.
- These arrangements should be set out in the transporter's safety case.
- 7.2.2 Notification to consumers of the need to shed loads should be achieved by direct contact and/or public appeal, as appropriate.
- The transporter shall determine the type of contact methods and co-ordinate them as necessary.

7.3 PROCEDURE

- 7.3.1 If shedding of firm loads is to be implemented, shedding shall be effected by the relevant transporter.
- 7.3.2 Where the transporter itself is to contact consumers, for example those consuming large volumes of gas, such consumers shall be contacted and instructed to stop taking gas as soon as practicable.
- 7.3.3 Where the transporter contracts a third party to contact consumers, the party shall implement the following procedure:

- confirm receipt of message and instruction from the transporter
- contact such consumers and instruct them to stop taking gas as soon as practicable
- provide frequent progress reports to their transporter, until all consumers required to stop taking gas have confirmed that they have complied with the direction.

The timing for confirmation of receipt of message and progress reports, and the form of the information passed, should be agreed between the third party and transporter. The arrangements should be set out in the transporter's safety case.

Shippers and/or suppliers of consumers should be advised of the direction.

Note: For consumers of large volumes of gas, shippers need to provide the transporter with emergency contact information. The transporter needs to then record this information and ensure that a current listing of the emergency contacts is available for use.

- 7.3.4 The transporter should monitor the supply and demand situation and, if necessary, initiate a first public appeal (see Sub-section 7.6) to take as little gas as possible. This action may be taken simultaneously with the direct contact under clause 7.3.2.
- 7.3.5 If there is a need for further load shedding, the transporter should initiate a second public appeal, this time to stop taking gas altogether.
- 7.3.6 At the time of any public appeal, the transporter should ensure that all priority consumers are, or have recently been, advised that they may continue to use gas for essential purposes.

7.4 **FORCED ISOLATION**

- 7.4.1 The transporter should have arrangements in place to verify that firm consumers, when requested, have stopped taking gas. If, in the judgement of the transporter, the security of the network, or part of the network, is at risk because a particular firm consumer continues to take gas (having been given directions to stop taking gas), they may arrange to physically isolate the firm consumer at the service outside the premises.
- 7.4.2 The transporter should try to contact, by all available means, the firm consumer in advance of the intended forced isolation to discover the reasons for failure to stop taking gas, and then take this into account. For example, a plant may need to shut down slowly for safety reasons. If there is no justifiable reason, the firm consumer should be advised (in writing) that forced isolation will take place after a specified time. Although failure to contact a firm consumer may not prevent or delay forced isolation, the transporter should take account of the safety consequences of ceasing supply.

7.5 **PRIORITY CONSUMERS**

- 7.5.1 The priority consumer criteria are set by the DTI and shippers nominate their priority consumers against these criteria, and inform the transporter of their details. Status as a priority consumer must be recorded by the transporter, with the other consumer information, for use in shedding of firm load. Shippers shall ensure that all their consumers who meet the DTI criteria for priority consumer status are promptly notified to the transporter.
- 7.5.2 Wherever practicable, supply shall be maintained to priority consumers in preference to similar sized domestic loads. However, supplies to priority consumers should not be maintained regardless of the consequence, particularly if this would result in loss of

supplies to significant numbers of domestic consumers.

7.5.3 Priority consumers should be contacted by the transporter if it becomes necessary to isolate their gas supply.

7.6 **PUBLIC APPEALS**

7.6.1 During local and network supply emergencies, the transporter should ensure that arrangements are in place with the media for the effective release and timing of public appeals e.g, local radio, television and the press. This may include co-operation with other affected transporters.

Shippers and/or suppliers should be informed that a public appeal is to be made to enable them to deal with enquiries from consumers.

7.6.2 Care should be taken not to cause undue alarm to the public.

SECTION 8 : SYSTEM ISOLATION

This section deals with the physical isolation of systems serving more than one consumer. Reference to forced isolation of individual consumers is made in Sections 6 and 7.

8.1 GENERAL

8.1.1 The transporter shall ensure that isolation procedures have been prepared for the progressive physical isolation of all or parts of the supply system as appropriate and for the implementation of steps to be taken for that isolation as outlined in Sub-Section 8.2.

8.1.2 System isolation procedures should, wherever practicable, be based on isolation of the minimum number of consumers.

8.1.3 System isolation procedures should specify any measures for maintaining a positive pressure in any isolated downstream system.

8.2 PROTOCOL

8.2.1 If all load shedding measures fail to contain the problem, and system pressures are falling or will fall to unacceptable levels, the transporter shall ensure the isolation of all, or parts of, the supply system as required.

8.2.2 The transporter should ensure that all consumers who will or are affected by a supply isolation are informed in writing as soon as practicable.

Note: The circulation of pre printed cards to consumers premises is an acceptable method.

8.2.3 The transporter should contact all priority consumers as outlined in Section 7.

8.2.4 The transporter shall advise the appropriate local authority of the loss of supply to all priority and vulnerable consumers.

8.2.5 Where appropriate, the transporter shall ensure that arrangements for dealing with vulnerable domestic consumers are implemented.

Note: A PGT (Public Gas Transporter) has special obligations to any vulnerable domestic gas consumer under the terms of the licence under the Gas Act 1986 as amended by the Gas Act 1995 .

SECTION 9 : RESTORATION OF SUPPLY

This section deals with the restoration of supply to interruptible consumers and firm consumers where forced isolation has taken place and/or when system isolation has taken place.

9.1 GENERAL

The NEC or transporter, as appropriate, shall direct the restoration of supply and the criteria for such restoration shall be set out in their safety case.

9.1.1 The transporter should draw up full operational procedures to implement the restoration of supply. Account should also be taken of any procedures in the relevant Network Code.

9.1.2 The transporter should ensure that all consumers who have been affected by supply isolation are informed as soon as practicable, where necessary in writing, that supplies have been restored.

Note: It is unnecessary to inform, for example by telephone, every large firm consumer or priority consumer that supplies are back to normal if a site visit is planned as part of the restoration process.

9.1.3 The transporter shall make suitable arrangements for the safe reconnection of supply to any consumer whose supply has been forcibly isolated.

9.2 PROTOCOL FOR RESTORATION OF SUPPLY

9.2.1 If the supplies to an entire supply system have been isolated, the supply system should be recommissioned in pressure tiers, i.e. any high pressure system should be recommissioned first, followed successively by the intermediate, medium and low pressure systems.

9.2.2 Subject to engineering constraints, the transporter shall authorise restoration of supplies in the following order of priority:

- (a) priority and domestic consumers (see clause 9.2.3)
- (b) all other firm consumers
- (c) interruptible consumers.

9.2.3 Supply should be restored to priority consumers in preference to similar size (in aggregate) domestic loads. Supplies to priority consumers shall not be restored preferentially if this would result in a delay in the restoration of supplies to large numbers of domestic consumers.

SECTION 10 : COMMUNICATIONS

- 10.1 Good communications between the NEC, transporters, all parts of the gas supply chain and emergency services, as appropriate, are important to ensure safe handling of a supply emergency. These should be maintained with all those affected, in some instances from the time when a potential emergency is recognised to the point where normal operations have been restored.
- 10.2 Facilities should be provided at all locations that could, potentially, be involved in managing and controlling an emergency for sending and receiving messages. These facilities should include :
- landline telephones
 - mobile phones
 - fax on external line.
- The telephones and fax machines should, preferably, be dedicated emergency facilities. Arrangements should be made for them to be manned or monitored, where appropriate, on a 24 hour basis.
- 10.3 It is important that each location has a comprehensive and up to date record of emergency telephone and fax contact numbers. If the numbers are changed, the new numbers should be notified immediately to those requiring them.
- 10.4 A record should be kept of the telephone and fax numbers of contacts with the local Emergency Services, television and radio stations and press offices to ensure that they can be utilised quickly when required, for example when a public appeal is to be made.

SECTION 11 : OPERATION OF AN EMERGENCY CONTROL CENTRE

11.1 POLICIES AND PROCEDURES

The NEC and transporters should prepare written procedures setting out details of the operation of an emergency control centre. These procedures should include consideration of the level of preparedness that should be maintained and address the issues set out in Sub-Sections 11.2 to 11.6 inclusive.

11.2 ROLES AND RESPONSIBILITIES

In order for a control centre to operate efficiently, a clear command structure should be established to enable decisions to be made quickly, and to ensure that the responsibilities and roles of key personnel are defined in such a way as to achieve this.

Responsibilities should include, as appropriate:

- overall management of the control centre
- overall management of gas supplies
- overall management of communications and information
- liaison with other transporters and the NEC, where appropriate
- liaison with shippers and suppliers
- liaison with large firm loads
- liaison with Emergency Services.

11.3 COMMUNICATIONS

Clear lines of communication should be established and, in addition, the methods by which information will be received and sent, including back-up arrangements in the event of a failure. Consideration should be given to:

Hardware

- computers
- dedicated telephones and faxes
- use of multi-message systems
- control of noise, for example use of head sets.

Procedures

- contact/response procedures
- confirmation message received/action taken
- incident status board.

11.4 **RECORDING AND USE OF INFORMATION**

Arrangements should be in place to collect and collate the information generated in their control centre and to ensure that it is in the correct format to facilitate rapid decision making. The arrangements may include:

- use of suitable computer software
- incident status board
- incident log book.

11.5 **PERSONNEL**

Sufficient numbers of competent personnel should be available at all times to staff the control centre. Those personnel should be fully trained in:

- procedures to be followed during an emergency
- the operation of the control centre
- their particular roles and responsibilities
- use of relevant equipment.

11.6 **TESTING**

11.6.1 Routine testing of the equipment provided in the emergency control centre should be carried out to ensure its continued operation.

11.6.2 Periodic exercises that test procedures and management of the control centre should be carried out to ensure effective operation of the control centre and maintain staff familiarity with the procedures (see Section 13).

SECTION 12 : RECORDING AND UPDATING OF INFORMATION

12.1 RECORDING OF INFORMATION

12.1.1 information should be recorded for the following purposes:

- to ensure that, when an emergency is called, there is sufficient information available for the NEC or transporter to plan and co-ordinate their response.
- to ensure that the emergency is properly handled and that there is an auditable trail to demonstrate this

12.1.2 In order that the NEC or transporter, as appropriate, can plan and co-ordinate a response to an emergency, they should make arrangements for obtaining, recording and retaining information on (as a minimum):

- other transporters connected to their system, the location and nature of connection
- shippers who use their system
- all interruptible consumers, their locations and maximum demands
- all large firm load consumers, their locations and maximum demands
- organisations used for handling the emergency
- flow of gas into the network system (where appropriate)
- any changes to the above.

The information should include names of contacts, telephone and fax numbers and dates of changes.

12.1.3 In order to ensure the supply emergency is adequately handled and that there is an audit trail, the NEC or transporters, as appropriate, should make arrangements for obtaining, recording and retaining information on:

- **notifications of emergency**
 - the time and date the supply emergency was called by the NEC or transporter
 - notification received on the cause of the supply emergency and actions to be taken
 - further notifications received and actions to be taken
 - confirmations sent that actions have been taken
 - immediate actions taken if the supply emergency has been caused by pipe failure, etc.

- **interruptible consumers and firm load consumers**
 - notifications sent to transporter/shipper for such consumers to stop taking gas
 - confirmations received that such consumers have received notification
 - further confirmation received that interruptible consumers have stopped taking gas
 - actions taken to isolate such consumers.

- **isolating supplies**
 - communications to and from other organisations used during the emergency
 - notifications sent to transporter to isolate supply areas
 - actions taken to isolate supply areas.

- **restoration of supplies**
 - notification received that supply emergency is over
 - confirmation sent of receipt of notification
 - actions taken to restore supply
 - notifications sent to shippers that supply has been restored
 - confirmation to NEC transporter that system is operating normally.

12.1.4 Information shall be recorded in a permanent form, by any suitable method, for example computer database or logbook.

12.2 UPDATING OF INFORMATION

12.2.1 Information required by clause 12.1.2 should be updated as soon as there is a change, for example when a new shipper or interruptible consumer uses the system. All parties affected by the change should be informed.

12.2.2 There should be frequent and regular reviews, by the transporter, of information provided by the companies who interact with or use the transporter's system. In addition, arrangements should be in place to obtain this information on a daily basis where appropriate.

12.2.3 Information required by clause 12.1.3 should be updated as required and will depend upon the supply emergency. For example, hourly rates may be required of the interruptible or large firm consumers to monitor how quickly the demand for gas is reducing and to plan for further actions.

SECTION 13 : EMERGENCY EXERCISES

13.1 GENERAL

13.1.1 To ensure the adequacy of any emergency procedures and their understanding by those charged with implementing them, periodic testing must be undertaken by the NEC and transporters. Detailed plans and procedures should be formulated to deal with all foreseeable events (this is a general requirement of the Management of Health and Safety at Work Regulations 1993).

13.1.2 Timing of the periodic testing should take account of the introduction of new procedures and significant changes in personnel.

13.2 OBJECTIVE

Any test of the procedures should address the following :

- **testing**
 - robustness of the procedures under simulated emergency conditions
 - knowledge of personnel of the emergency procedures
 - response of personnel to the emergency
 - lines of communication.
- **reviewing**
 - the outcome of the test.
- **identifying**
 - any failures or shortcomings in the procedures
 - any improvements that could be made to the procedures
 - any additional training requirements for personnel.

13.3 METHODS OF ACHIEVING OBJECTIVE

13.3.1 One method of testing procedures is to run periodic simulations of conditions and events that could lead to a network supply emergency. Computer simulations may be used to test procedures. However, it should be noted that, while such methods may have advantages when training personnel directly involved in the management of the network, it may not allow real time testing of other elements of the procedures such as communications channels.

13.3.2 Table top exercises may be appropriate in some cases, particularly to define the roles of key personnel and strategies to be adopted.

13.3.3 Exercises that test particular parts of the procedures, especially those that are safety critical, for example communication links or those that failed during a larger scale exercise, should also be considered.

13.4 PLANNING A SIMULATION EXERCISE

- 13.4.1 Any simulation exercise should be based around a realistic scenario. The scenario should be researched in sufficient detail to allow it to develop naturally and to respond to the actions taken to control the situation. One useful method is the development of a large decision tree model covering the likely decisions that could be taken at each major decision point, and building out on these. This can also be utilised to decide which parties need to be informed of the exercise.
- 13.4.2 All parties that may be involved in the exercise should be informed that the exercise is to take place. This extends to consumers, where they may be contacted as part of the exercise.
- 13.4.3 It is important that exercises be observed by non-participants to enable a review to be conducted.
- 13.4.4 Care should be taken when planning a simulation exercise that sufficient resources are still available and not involved in the exercise, to monitor the actual operation of the network and take any actions necessary to maintain the safe operation of the system.
- 13.4.5 Responsibility for terminating the exercise should be clearly defined.
- 13.4.6 Exercises should also include scenarios where first line procedures or equipment fails, and backup arrangements are required, e.g. breakdown of communication channels or power failure in the control room.

13.5 RUNNING THE EXERCISE

- 13.5.1 The exercise should be run under conditions that are as realistic as possible. All written or spoken communications referring to the exercise should be preceded by a code word or phrase.
- 13.5.2 All parties involved shall be made aware that an exercise is in progress. A clear start to the exercise is necessary to prevent any confusion. A clear end is equally important.
- 13.5.3 The observation of the exercise should include taking of detailed notes covering actions, decisions and, where possible, the deductive process used to arrive at each decision. Timings are also important, and should be recorded.

13.6 REVIEWING THE EXERCISE

- 13.6.1 The review should be on two levels:
- the detailed observations should form the basis of the detailed review of the performance on the procedures and the performance of the personnel
 - the anecdotal evidence of all the personnel involved should also be sought, as this will often identify areas of stress where operation of the procedures is not as smooth as possible.
- 13.6.2 A formal report on the operation of the exercise should be produced, identifying areas for improvement, and areas where the procedures worked well. Specific recommendations should be actioned by changing the procedures. A formal method of document control should be considered for all emergency procedure documentation.
- 13.6.3 Deficiencies in knowledge and understanding should also be identified, and moves made to remedy these through additional training.
- 13.6.4 Feedback should also be provided to all parties involved in the exercise.

SECTION 14 : REVIEW AND AUDIT

Review and audit constitute the feedback loop which enables the producers, terminal operators, NEC, transporters, storage operators, shippers, suppliers and other affected bodies to maintain and develop their ability to manage supply emergencies to the fullest extent possible. This is dealt with in detail in IGE/GL/4*.

* **Gas Legislation Guidance IGE/GL/4. Management and Audit Procedures**

APPENDIX 1 : REFERENCES

A1.1 LEGISLATION IN GREAT BRITAIN

- Gas Act 1986, as amended by the Gas Act 1995
- Gas Safety (Management) Regulations 1996
- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1992
- Pipelines Safety Regulations 1996.

A1.2 HSE APPROVED CODES OF PRACTICE AND GUIDANCE

- Approved Code of Practice on Design, Construction and Installation of Gas Service Pipes
- Health and Safety series booklet HS(G)65: Successful Health and Safety Management
- Guidance on the Gas Safety (Management) Regulations 1996.

A1.3 HEALTH AND SAFETY COMMISSION

- Report-Britain's Gas Supply: A Safety Framework, published in March 1995.

A1.4 DTI/ OFGAS JOINT DOCUMENTS

- Consultation Document-Competition and Choice in the Gas Market, published in May 1994.

A1.5 INSTITUTION OF GAS ENGINEERS PUBLICATIONS

Gas Legislation Guidance

- IGE/GL/4 Management and Audit Procedures
- IGE/GL/7 Safety Cases.

Safety Recommendations

- IGE/SR/20 Recommendations for Dealing with Reported Gas Escapes.

APPENDIX 2 : GLOSSARY

For the purpose of this Guidance, the following definitions apply.

consumer	An individual system exit point, at which gas may be drawn from the system for the purpose of supplying directly to particular premises.
firm consumer	A consumer where the offtake of gas is not subject to a contractual agreement for interruption.
interruptible consumer	A consumer where the offtake of gas is subject to a contractual agreement for interruption.
network	A network within the meaning of the <i>Gas Safety (Management) Regulations 1996</i> . It does not include a stand alone network that does not supply any domestic consumers.
network code	A document required to be prepared by a 'Public Gas Transporter' which sets out the transportation arrangements for using the PGT's part of the network.
network emergency co-ordinator (NEC)	As defined in the <i>Gas Safety (Management) Regulations 1996</i> , Regulation 3(2).
shipper	As defined in the Gas Act 1986.
supplier	As defined in the Gas Act 1986.
supply emergency	As defined in GS(M)R.
transporter	A person who operates pipes on a network and who has control over them for the purpose of conveying gas.