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## Overview

This standard is about identifying, assessing, prioritising and minimising risks and hazards for reported upstream gas emergencies. This standard applies to gas escapes that take place between gas terminals and emergency control valves/ meters. It can apply to any type of fuel gas or combinations of fuel gas including, but not restricted to, natural gas, LPG, blended or 100% hydrogen.

This standard does not imply that there is one sequential method of responding to reported gas emergencies. The nature of gas escapes are unpredictable and need to be dealt with on an individual basis. It involves making sure that all the work is carried out safely in accordance with industry specific operational procedures and systems associated with risk reduction and removal.

This standard is for emergency first responders in the gas industry.

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## Performance criteria

### You must be able to:

1. Proceed to reported emergency situations without delay to meet minimum response standards, reporting arrival on site to appropriate people
2. Position vehicle and equipment to avoid ignition dangers
3. Confirm received job information with emergency dispatch control centre and the person reporting emergencies to ensure you have complete, accurate and up-to-date information to assist in effective location and isolation of emergencies
4. Check all work and personal protective equipment and tools necessary for all stages of the work is available, in date, correctly calibrated, safe to use and fit for purpose
5. Carry out site-specific risk assessments, establish and maintain a safe working area and work safely at all times in accordance with health, safety, environmental and other regulations and requirements, approved industry practices and procedures and organisational policies
6. Survey work sites and building fabric for any existing damage or defects and protect them against any further damage being caused during emergency work, recording findings and advising property owners of any defects in line with company procedures
7. Liaise with and update emergency dispatch control centre, emergency services, HSE, property occupiers and other people affected at key stages throughout gas emergencies
8. Summon additional resources and support from services and authorities when required in response to incidents
9. Utilise an appropriate plant location and equipment avoidance survey to establish siting and locations of gas supplies, IGT sites, other services and utilities and areas of special interest, accessing maps of utilities plant where applicable
10. Locate underground plant using plant avoidance tools and equipment and make bar holes in appropriate places
11. Force entry to locked or unoccupied properties in line with company and industry procedures
12. Check for, and record, visual signs, smells, and gas ingress from internal spaces, voids, and around properties and from incoming services and utilities in accordance with industry standards and procedures
13. Take and record appropriate internal and external gas, carbon monoxide and other atmosphere samples in all adventitious openings in accordance with industry standards and procedures
14. Identify the extent of investigation areas in line with industry practices and procedures
15. Undertake site surveys to determine the location, extent and levels of gas or carbon monoxide escape and assess and record the severity of hazards and emergency implications for people and property
16. Categorise outcomes of site surveys and agree actions required for escape prioritisation of any unsafe situations in consultation with senior person on site in accordance with industry standards and procedures
17. Take prompt action to evacuate people, create safety zones, isolate gas and electricity supplies, eliminate actual and potential sources of ignition, place fire extinguishers ready and ventilate properties as appropriate in line with findings and industry procedures
18. Take precautionary steps to prevent unauthorised re-entry to evacuated areas by using barriers, tape and warning signs

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19. Carry out temporary repairs when necessary in line with industry procedures
  20. Hand over all job information and evidence gathered from worksites to engineering repair teams
  21. Monitor, recheck and record levels of gas and carbon monoxide concentration both inside and externally around properties or work sites at regular intervals during and after the repairs have been carried out, before leaving the site and before authorising re-occupation
  22. Use designated safe isolation methods, tests, and procedures to disconnect and label unsafe gas appliances, gas systems and components and cap off gas supply using the correct fittings
  23. Use tightness testing, safe isolation and safety checking procedures to confirm the integrity of systems and appliances
  24. Check gas system operating pressures meet industry standards
  25. Use appropriate test equipment to check operating pressure and gas rate meet industry standards and manufacturers' requirements
  26. Resolve problems within own area of responsibility and competence in accordance with approved procedures
  27. Complete and submit all relevant documentation and paperwork of test results and actions taken using company reporting systems and documentation, and in accordance with statutory requirements in line with industry standards
  28. Report any interruptions to gas supplies, poor pressures, delays to the work, unresolved problems, unsafe situations and required remedial actions to those who require the information
  29. Establish and confirm that work sites are safe to leave following repair or when no leak was detected in line with industry procedures

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## Knowledge and understanding

### You need to know and understand:

1. Regulations and guidance governing health and safety in the workplace, environmental protection and the use of risk assessments including safe access, working at height, lone working and working in confined spaces
2. Legislation covering your general responsibilities for your own safety and that of others and the limits of your own autonomy and responsibility
3. Gas industry unsafe situations procedures including concern for safety, at risk, immediately dangerous and reporting of injuries and dangerous occurrences and how to isolate unsafe gas appliances, gas systems and components
4. Your health and safety obligations including assessing and prioritising hazards, taking action to minimise risks in order of priority, monitoring effectiveness of risk control measures, re-assessing risk on a regular basis and recording hazards
5. Industry practices and procedures regarding the minimum extent of investigation area when dealing with reported upstream gas escapes
6. Information to be included in site-specific risk assessments including gas emergency, access to the work site, movement of the workforce, members of the public, and the movement and safe storage of materials, tools and equipment for the job
7. Industry practices, procedures, precautionary measures and actions to make safe identified hazards within a potentially gaseous environment including; minimising risk of ignition, minimising escapes, evacuation of property and adjacent property, forced entry, minimising escapes, creating safety zones, positioning of vehicles and equipment, use of temporary continuity bonds, preventing smoking, having fire extinguishers ready, utilising all appropriate PPE and safety equipment, wetting the work area and maximising ventilation in all voids, ducts, drains, cellars
8. Information to include in a site survey including type of gas, controlled or uncontrolled, spread and level of gas concentrations and readings, whether the escape is external to properties or tracking internally into them, location of nearest properties, location of confined spaces, presence of other utilities where gas can track, presence of ignition sources, density of motorised and pedestrian traffic, the level of ventilation, any electrical concerns, availability and access to isolation method, gas pipe material, any escape history, any visual signs of previous work, weather and ground conditions and no trace results
9. The range of places from where gas samples should be collected, both high and low, including in bar holes, voids, drains, ducts, sewers, cellars, telecommunication ducts, in or around plant and street furniture, in or around governor housings and chambers
10. Industry practices, work standards routines and sequences for dealing with gas escapes, gas incident investigations and other emergencies
11. Methods of working which protect the building, customer property and existing gas systems and components
12. The range of tools, test and other equipment and materials required, procedures for ordering, supplying, checking and delivery and steps to take if they are not available including gas detection equipment, personal protective equipment, electric detection equipment, plant avoidance tools and equipment and equipment for making bar holes
13. Care, maintenance and storage requirements of tools and equipment, and checks for safe condition including the purpose of PAT testing
14. The characteristics and properties of LPG and other gases

15. The company standards of service for attending uncontrolled and controlled gas escapes and faulty meter jobs
16. Industry standards, safety schemes, regulations, practices and procedures for carrying out upstream gas emergency activities including reported gas escapes, reporting injuries and dangerous occurrences, emissions of fumes from gas appliances, fire or explosion, loss or interruption to gas supply, poor pressure reports at non domestic properties, suspected theft of gas, no trace situations including re-checks, lack of access or no access to properties, environmental reporting of unplanned releases, gas incident investigations
17. Regulations and their implementation related to rights of entry and its implementation including; accessing properties, notification to emergency dispatch control centre and line manager and the implications
18. Industry practices, techniques and procedures for carrying out barholing and roads and streetworks requirements before and after completing barholing activities
19. The industry practices and procedures for escalation of gas escapes including when, how and who to report to, responding to high pressure escapes from national or local transmission systems from pipelines and above ground installations, re-occupation of properties following evacuations, identifying and responding to gas clouds, responding to interruptions to gas supplies and poor pressure reports, including water ingress, pipe failure, pipe blockage, human error, equipment failure, external damage
20. How to interpret building regulations and plans for domestic and small commercial properties including types of foundations, walls, floors, ceilings, roofs and other services entering properties
21. How and where to access and interpret normative documents, guidance documents, industry standards and company procedures for upstream gas emergency activities
22. Potential sources of ignition including street lighting, electric street signs, motor vehicles, balanced flue chimneys, electric switches, industrial process plant, mobile phones, overhead power lines, doorbells, entry systems
23. Procedures, precautionary measures and actions to be taken within a potentially carbon monoxide environment including short term and long term exposure limits, effects and symptoms of carbon monoxide, key advice to be given to people affected by fumes, how to record readings, alarm operations; evacuation, forced entry and maximisation of ventilation
24. Safe isolation methods, tests, and procedures for temporary and permanent de-commissioning of gas and electricity systems, components and appliances including use of temporary continuity bonds, non-contact voltage detectors
25. Key information to communicate with emergency dispatch control centre including to confirm job information on receipt of job, if unable to attend reported emergencies in sufficient time, to keep informed of situation on site and all ongoing information, both during and after location of gas emergencies
26. Points in the upstream gas emergency activities where co- operation and liaison with emergency services, other trades and property occupiers may be required
27. The procedures, routines, sequences and work methods for exchanging emergency control valves (ECV's) and meter inlet control valves (MIV's), re-connecting to gas input services, connecting components to gas systems, re-commissioning gas systems, tightness testing and procedures to check safety of gas systems and components
28. How to record the results of testing activities and actions taken using company reporting systems and documentation, in accordance with statutory requirements for all upstream gas emergency activities
29. Tests, checks, appropriate test equipment and how to use it to confirm the suitability of gas combustion performance and operating pressure of gas systems and components

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- 30. Industry practices, procedures and criteria for site handover and to establish and confirm that the site is safe to leave after the repair work has been carried out
  - 31. The statutory requirements for recording the results of testing activities and actions taken and, using company reporting systems and documentation
  - 32. Job management structures and methods of reporting and recording job progress or problems delaying
  - 33. How to safely collect and dispose of system contents that may be hazardous to health or the environment

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