



Planning &
Environment

NSW Gas Networks

Performance Reporting Guidelines

NSW Department of Planning & Environment
Division of Energy, Water, Regulation & Portfolio Strategy
L-12, 10 Valentine Ave.
Parramatta NSW 2150

Rev. April 2017

Contents

- Introduction1
- 1 Immediate Reporting Requirements2
 - 1.1 Incidents and Emergencies.....2
 - 1.2 Accidents.....2
 - 1.3 Non-compliant Gas2
 - 1.4 Odorant3
 - 1.5 Disconnection Notices3
- 2 Periodic or Routine Reporting4
 - 2.1 Periodic Audit Reports on Safety and Operating Plans4
 - 2.2 High Pressure Pipeline Activities (greater than 1050 kPa) for unlicensed pipelines4
- 3 Annual Performance Reporting Requirements5
 - 3.1 Network Asset Information5
 - KPI for Network Asset.....5
 - 3.2 Network Integrity and Safety Information.....5
 - 3.3 Network Reliability and Consumer-Related Matters6
 - KPIs for Network Reliability and Consumer related matters.....6
 - 3.4 High Pressure Pipeline activities (greater than 1050 kPa) for unlicensed pipelines7
 - 3.4.1 Accidents, Escapes and Ignitions7
 - KPIs for unlicensed High Pressure Pipelines7
 - 3.4.2 Integrity Assessment / Monitoring8
 - KPIs for High Pressure Integrity Assessment / Monitoring9
 - 3.4.3 Operational Performance.....9
 - KPIs for Operational Performance9
- Notes 10

Introduction

In 2001 the NSW Government introduced a formal reporting requirement for gas networks licensed under The *Gas Supply Act 1996* (the Act) and operating under the then *Gas Supply (Safety Management) Regulation 2002*. The reporting template was refined in 2005 and 2010. The above regulation has since been replaced with the *Gas Supply (Safety and Network Management) Regulation 2013* (the Regulation).

The NSW Department of Planning & Environment (the Department) recognises that it is necessary to collect data that is relevant and beneficial to all parties and not information that provides no significant outcome. For this reason the reporting template is regularly reviewed, in consultation with gas network operators.

Recent refinements have resulted in an improved reporting process, with the information being received by the Department in Excel format, providing the Energy, Water, Regulation & Portfolio Strategy Division (Energy Division), and the gas industry, with more meaningful and useful data.

This template is based predominately on the use of Key Performance Indicators (KPI). It is not necessary, however, for the network operator to calculate each KPI as the Department will carry out this operation as part of the overall evaluation process. The network operator may however do this if it is convenient to do so.

There is use of “forward looking” or positive indicators, which focus on prevention of hazardous events, as well as “backward looking” or reactive indicators, which report incidents that have occurred.

The Energy Division collates the information contained within the annual reports, submitted by the network operators, to produce a summary report which reflects the overall performance of gas networks in New South Wales. Any matters requested in the template that do not relate to asset integrity and risk mitigation are not included in this final report but are used by the Department for the purpose of monitoring trends.

The Reporting Template has been broken into three main of categories:

- Immediate Reporting Requirements
- Periodic or Routine Reporting
- Annual Performance Reporting Requirements

Apart from Immediate and Periodic reporting, the annual performance reporting period is from July 1st to June 30th and the report is to be lodged with the Department by August 31st each year.

Network Operators can include the details of more than one gas network within the one annual performance report, however the information provided must clearly identify the reporting requirements against each network.

This template does not cover pipelines licensed under the NSW *Pipelines Act 1967*. Reporting of matters relating to Licensed Pipelines are covered by the Licensed Pipelines Performance Reporting template.

1 Immediate Reporting Requirements

Detailed below are those matters that require advice to be supplied to the Department (Secretary) as soon as it is practical to do so after the event.

1.1 Incidents and Emergencies

A network operator must cause the Secretary to be notified upon becoming aware of:

- Unplanned escape and/or ignition of gas that requires active involvement by any emergency service (fire brigade, ambulance etc) or may attract media attention; or
- Unplanned disruptions to supply of gas to 5 or more customers; or
- Need to evacuate premises as a result of the escape or ignition of gas.

Notification must be given by telephone, facsimile or other means as soon as is practicable after the network operator becomes aware of the event. Details to be provided are to include time, location and nature of the incident.

The Secretary may request additional information on any particular incident. In such event full details of the incident are then to be submitted, in writing, to the Secretary within 21 days of the request. This report should include the nature of the event, the time and location and provide details of any evacuation of premises. Other details should also note the nature and description of the repairs carried out to rectify the problem and the time taken to complete the repairs.

1.2 Accidents

A network operator must cause the Secretary to be notified immediately upon becoming aware of any incident that involves the escape and/or ignition of gas on a network system which;

- Involves death or serious injury to any person employed on the construction, maintenance or operation of a network system, or to the general public; and/or
- Results in any substantial property damage.

Notification must be given by telephone, facsimile or other means as soon as practicable after the time when the network operator becomes aware of the event. Details to be provided are to include time, location and the nature of the accident.

Substantial property damage would mean for example if the premises were uninhabitable as a result of that event.

Serious injury would mean any injury requiring treatment at a hospital.

Full details of the event are then to be submitted, in writing, to the Secretary within 14 days after the initial notification. This report must indicate the nature of the event, time and location and give details of any death, injury or property damage.

1.3 Non-compliant Gas

On becoming aware of non-complaint gas (refer the Regulation), being injected into the distribution system, the network operator must notify the Secretary. The notification may be by telephone, facsimile, e-mail or other means. This report is to include the means the Network Operator proposes to remove the non-compliant gas from the network.

Full details of the event are then to be submitted, in writing, to the Secretary within 14 days of that notification. This report is to include the source of the non-compliant gas, details of the non-compliant components of the gas, the period the gas was non-compliant and any safety issues that may have occurred or may occur as a result.

1.4 Odorant

Schedule 1 of the Regulation requires network operators to identify within their safety and operating plans the general specification of the gas being conveyed, that the gas is malodorous and specify the odour levels. On becoming aware of gas being conveyed anywhere within the network that does not meet the specifications detailed in the safety and operating plan, this shall be reported to the Secretary.

Initial notification must be given by telephone, facsimile, e-mail or other means. Full details of the event are then to be submitted, in writing, to the Secretary within 14 days of that event. This report is to include the actions taken by the network operator to correct the problem.

1.5 Disconnection Notices

Clause 10 of the Regulation empowers the network operator to refuse or discontinue supply of gas under specific situations. In the event that this power is exercised, written notice detailing the reason for disconnection is to be supplied to the Secretary.

The notice should include the name and address of the consumer; name, signature and licence number of the gasfitter who made the disconnection.

The reason for disconnection should identify whether it is for a faulty consumer service, leak at meter set, faulty consumer installation, faulty appliance or any other reason. There should also be details of any recommended actions required by the consumer.

This notice should be made available to the Secretary within 14 days of the disconnection being carried out.

2 Periodic or Routine Reporting

Detailed below are those routine reports that are to be lodged with the Secretary at specified times throughout the year.

2.1 Periodic Audit Reports on Safety and Operating Plans

This covers the periodic audit report on the Safety and Operating Plan which must certify that:-

- The Safety and Operating Plan complies with Schedule 1 of the Regulation, and
- The measures implemented to prevent hazardous events identified in the plan from occurring, and intended to protect operating personnel, plant, equipment, the community and the environment should they occur, are being maintained, and
- There are properly trained and equipped personnel available to maintain the plan, and
- The plan is adequate and appropriate having regard to any changes in the gas network since the previous audit certificate was issued, and
- Any measures to rectify any non-compliance with the plan detected in any previous audit have been undertaken, and are effective.

In essence, the requirements of the Regulation in this regard will apply.

2.2 High Pressure Pipeline Activities (greater than 1050 kPa) for unlicensed pipelines

These reports relate to pipeline integrity and management reports required by AS 2885 – Pipelines; Gas and liquid petroleum, for those sections of the gas network which are covered by that Standard.

The network operator should, within 28 days of the report being completed, provide the Secretary with a copy of any report prepared in compliance with the requirements of the AS 2885 suite of Standards including:

- Any review of the suitability of pressure protection systems
- Any investigation of the condition of a pipeline and any limits for its continued safe operation beyond its design life
- The results of any testing of the integrity of the pipeline carried out as a result of a particular occurrence
- Any periodic audit and assessment
- The results of any planned emergency simulations / training
- Any review, investigation or test relating to the maximum allowable operating pressure (MAOP) of the pipeline
- Any review of the classification of the locations along the pipeline or any reviews of the pipeline's risk assessment.

3 Annual Performance Reporting Requirements

This excludes all pipelines licensed under the NSW Pipelines Act 1967.

The following details are to be prepared by the network operators and lodged with the Secretary by the end of August each calendar year. Details within the report should encompass all activity conducted on each topic covering the period of 1 July to 30 June of each reporting year.

The Department requires that information be supplied **based on each distribution district or per each group of distribution districts**. Distribution districts may be grouped to rationalise the reporting, although this may only be done by prior agreement with the Secretary. All distribution districts can be in one report but must be individually identified.

Information is required in numerical format where appropriate.

3.1 Network Asset Information

This information is relative to the network's size and capacity and the ability to measure the gas transported and delivered.

- Total network pipe length (km) – by pressure class¹;
- Total quantity of gas entering each gas network system (in cubic metres and GJ or TJ);
- Total quantity of gas delivered to custody transfer points in each gas network (in cubic metres and GJ or TJ);
- New regions/areas connected to gas supply.

KPI for Network Asset

- *Unaccounted for Gas (UAFG)*²

3.2 Network Integrity and Safety Information

This information deals with product loss through escapes and from third party activity. It indicates how secure the assets are and how activity around the assets affect the performance. It also deals with preventive measures and leak surveys.

- Total number of gas leaks reported to network operator by third parties (on network only) disaggregated by pressure class¹;
- Total number of recorded mechanical damage incidents to gas networks, by type (e.g. excavations) and source (e.g. third party, network operator) – by pressure class¹
- Number of emergency exercises or simulations conducted (summarise findings);
- Total kilometres of pipe subjected to leak surveys; and
- Total number of leaks found during leaks surveys.
- Number of calls your “One-Call” system received about work near the networks.

KPIs for Network Integrity and Safety

- *Number of gas leaks per 10km of network reported by 3rd party*
- *Number of gas leaks per 1000 customers reported by 3rd party*
- *Number reported mechanical damage of network per 10km*
- *Number reported mechanical damage of network per 1000 customers*
- *Percentage of network leak surveyed*
- *Number of leaks per 10km of survey*
- *Number emergency simulations.*

3.3 Network Reliability and Consumer–Related Matters

This section deals with the network reliability. This is the ability to rectify situations that have occurred and the amount of time to have the events under control or rectified. The ability to respond to events within a specified time period. The consumer related numbers are used to assist in the KPI analysis as a relation to how many consumers are effected by the events.

- Total number of consumers³ connected to the network⁵ ;
- Total number of new customers⁴ connected to the network ;
- Total number of consumer hours of gas supply lost through unplanned losses of supply (when 5 or more consumers were affected);
- Total number of unplanned losses of supply up to the meter – where 5 or more consumers were affected;
- Total number of instances of poor supply pressure – recorded and confirmed⁶;
- Total number of recorded instances of non-compliant gas entering the network;
- Total number of recorded instances of odorant level out of specification anywhere within network;
- Number of incidents/emergencies responded to.
- Total number of incidents/emergencies that were not responded to within 60 minutes of receipt of notification.

KPIs for Network Reliability and Consumer related matters

- *Number of consumer hours off supply per 1000 customers*
- *Percentage of calls responded to within 60 min*

3.4 High Pressure Pipeline activities (greater than 1050 kPa) for unlicensed pipelines

High pressure pipelines activities are on assets where the operating pressure is greater than 1050kPa but are not licensed pipelines under the *Pipelines Act 1967*. The method of maintaining and monitoring these assets should be very similar to licensed pipelines, and in accordance with the requirements of AS2885.

3.4.1 Accidents, Escapes and Ignitions

Accidents, escapes and ignitions with unlicensed pipelines have the potential to have a high consequence if these incidents occur.

Incident

Any activity where contact is made to the pipeline. Whether or not the pipeline suffers a loss of containment and or damage. Identification of incidents that occur after the Operator became aware of the work provides an indication on the effectiveness of the Operators management measures

- The number of incidents in the reporting period.
- Number of incidents which occurred after notification of work being performed in area in the reporting period.

Loss of Containment (LOC)

Uncontrolled escape of any substance from the pipeline. The number of LOC events is the prime indicator of the effectiveness of the Operator's Safety Management System.

- Number of LOC events in the reporting period

Ignitions

Is when the LOC event also ignites. Ignitions are the most hazardous event which can occur on a pressure pipeline. This data allows for clear understanding of how often LOC events ignite.

- Number of ignitions that occurred in the reporting period.

Injuries or property damage involving the pipeline

Is when a person is injured or property is damaged and the pipeline has played a part in the incident occurring. This provides an indication of the consequence of any hazardous event.

- Number of injuries that occurred in the reporting period
- Number of property damages in the reporting period

KPIs for unlicensed High Pressure Pipelines

- *Incidents per one thousand kilometres per year (per 5 years and 10 years as data becomes available.)*
- *Number of LOC events per one thousand kilometers per year.*
- *Number of Ignitions per one thousand kilometers per year.*
- *Number of injuries per one thousand kilometers per year.*
- *Number of property damage per one thousand kilometers per year.*

3.4.2 Integrity Assessment / Monitoring

This section is reviewing the integrity of the pipeline and the monitoring activities that are performed to reduce the possibility of accidents or incidents happening on or around the licenced pipeline.

Integrity Assessment

AS 2885 Requires three primary reviews with respect to pipeline integrity to be conducted at intervals not exceeding 5 years.:-

- Review of Maximum Allowable Operating Pressure (MAOP)
 - Review of Location Class: and
 - Review of Risk Assessment.
- When was review last performed.
 - Number of integrity related actions identified.
 - Number of actions not addressed within the scheduled review timeframe

Pipeline Patrols

Personnel monitor the pipeline easement to maintain the condition and safety of the pipeline by preventing uncontrolled / unauthorised activity.

- Number of third party activities by patrol identified that did not previously contact the Operator by One Call or other means.

Supervised Activity around the Pipeline

Third party construction work is regularly performed near the vicinity of the pipeline that requires monitoring to make sure the pipeline is not damaged during such occasions. Third party damage is the most common cause of pipeline LOC events.

- Number of supervised activities around the pipeline area.
- Number of activities that required supervision that did not access a "One-Call" system or the Operator by other means.

Field Inspections

On occasions the pipeline may be inspected in certain areas for checking to ensure that the pipeline defects have not occurred or deteriorated.

- Number of field inspections performed and type (field, in-line inspection, dig-ups, etc.)
- Number of defects identified.
- Number of repairs required.
- Number of defects/repairs that require action not rectified in the scheduled timeframes.

Cathodic Protection (CP)

The pipeline is protected from corrosion (including stray currents) which can cause damage or an LOC event by protecting the pipeline with a CP system.

- Number of kilometres covered by CP system.
- Number of CP units on network
- Number of CP units that have not been operating correctly (in accordance with AS2832.1 criteria)

Coating defects

The coating is an important part of the pipeline and help prevent corrosion occurring. If the coating is badly damaged this will affect the performance of the CP in operating correctly

- Number of coating defects investigated
- Number of defects investigated that did not require repair (irrespective if a repair was conducted or not)

KPIs for High Pressure Integrity Assessment / Monitoring

- *Number of supervised activities per one thousand kilometres*
- *Percentage of activity that contacted the Operator.*
- *Percentage of pipelines kilometres that have been pigged in the last 5 years.(10 years)*
- *Defects requiring repair per one thousand kilometres in last 5 years*
- *Percentage of CP units operating correctly per year (5 or 10 years)*
- *Percentage of pipeline kilometres that are covered by CP*

3.4.3 Operational Performance

The operational performance monitoring is important as this is what maintains the as low as reasonably practicable procedures for preventing incidents happening. The utilisation of the pipelines allows an insight into possible alternative product flows.

Loss of Operations

Is when the pipeline or a part thereof becomes non operational due to circumstances that are unplanned.

- Number of times this has occurred
- Number of hours the pipeline or a part thereof is not operational.

Details of any unplanned or abnormal incidents that could have a long term effect on the safety of the pipeline

The pipeline is designed to run under certain conditions such as pressure and temperature. Extreme variations to these conditions can affect the long term life of the pipeline.

- Number of over-pressure events
- Level of over-pressure
- Number of temperature excursions
- Extent of excursions

KPIs for Operational Performance

- *Hours pipelines not operational per year (per 5 years and 10 years as data becomes available.)*
- *Number of unplanned or abnormal incidents per one thousand kilometres per year*

Notes

- ¹ Pressure classes:
- | | |
|-----|-----------------------|
| (1) | up to 1050 kPa |
| (2) | greater than 1050 kPa |

² Distributed losses or Unaccounted-for-Gas (UAG) (m³, GJ or TJ) – disaggregated, where available, for distribution districts: For a given period, UAG is that quantity of gas flowing into the distribution network which is not accounted for by deliveries, use by the reticulator, or by other known dispositions of gas during the period. Where a quantity of gas delivered during the period is not ascertainable directly by meter reading, that quantity should be estimated and the estimate included in the total quantity delivered during the period.

³ **Consumer** :- Is a supply that is active at the time of the report being performed.

⁴ **Customer** :- Is a supply that is connected to the network but may not necessarily be active at this moment.

⁵ By customer type – industrial, commercial, and residential. May be based on meter capacity.

⁶ This is considered to occur when pressure falls below system safety design pressures, and there is a risk of appliance failure.