New South Wales

2016-17 Licensed Pipelines Performance Report
This report was prepared by the NSW Department of Planning & Environment - Division of Energy, Water & Portfolio Strategy. Further information on reporting parameters is available on the Department’s website: http://www.resourcesandenergy.nsw.gov.au

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Executive Summary

The aim of this annual Performance Report (the Report) is to assess the performance of NSW licensed pipeline operators in implementing their pipeline management systems as required by the Pipelines Act 1967, the supporting Pipelines Regulation 2013, the AS 2885 Standard and other criteria set by the NSW Department of Planning & Environment - Division of Energy, Water & Portfolio Strategy (the Department). The Department can then identify any opportunities for improvement to ensure that security of supply is maintained and that risks to the public are kept As Low As Reasonably Practicable (ALARP). ALARP refers to the process of minimising the risks of adverse events, and is incorporated in the AS 2885 Standard - Gas and Liquid Petroleum.

All pipeline licensees have reported their performance figures to the Department, which are reflected in this Report, along with the previous four years’ figures.

In consultation with the pipeline licensees, the Department developed an annual reporting template which relates to technical performance, asset integrity and reliability. The previous years’ performance reports can be viewed on the Department’s website.

In 2016/17 there were 30 licensed pipelines operating in NSW, transmitting mainly gas and petroleum products, covering more than 4,870 kilometres.

This year’s report reveals one (unplanned) loss of operations, for 1.7 hours, but no losses of containment, no ignitions and no serious injuries or fatalities reported during the 2016/17 period.

The Report also provides an overview of safety performance, pipeline management systems and asset management activities for the pipelines in 2016/17.

To ensure the maximum value is obtained from the Report, the reporting processes and content are reviewed on an ongoing basis in consultation with the pipeline licensees and operators.
1. Introduction

This Performance Report is based on the 2011 reporting template, developed by the Department in consultation with the pipeline licensees. It covers all licensed pipelines in NSW and is presented on an aggregate basis from the individual Annual Performance Reports submitted by the licensees.

The Report presents information on the potential public safety hazards associated with pipelines and provides an overview of the key performance indicators (KPIs) that the Department monitors to ensure that any such risks are As Low As Reasonably Practicable (ALARP).

Submissions are made in accordance with the reporting requirements in the Pipelines Regulation 2013 (the Regulation).

The 2013 Regulation contains a number of significant changes from the 2005 version; Clause 11 of the Regulation requires licensees to implement a pipeline management system (PMS), which is in accordance with the relevant provisions Australian Standard AS 2885 – Pipelines gas and liquid petroleum. AS 2885 is a series of standards for design, construction, welding, operation and maintenance for all types of pipelines that reflects international “Best Practice” for the pipelines industry. The PMS replaces the Safety and Operating Plan in the 2005 Regulation.

Clause 11 states:

“Pipeline Management System to accord with AS 2885 - A licensee must implement a pipeline management system that relates to the pipeline operated under the licence and is in accordance with the relevant provisions of AS 2885.”

The NSW Government has the power to prosecute parties who fail to comply with the Regulation. The Regulation also contains significant penalties for damaging critical infrastructure assets or interrupting gas supplies.

The Department’s approach to safety regulation is performance based (sometimes referred to as “outcomes focused”). This approach focuses on desired outcomes rather than the means for achieving those outcomes. This allows for flexibility by pipeline operators in their KPI approaches and encourages innovation by the licensees.

The reporting requirements examine actions taken to prevent any loss of containment from pipelines, as nearly all licensed pipelines are considered to form a crucial part of the NSW energy infrastructure. With this aim, the Department’s primary focus, through the reporting process, is to prevent incidents from occurring and to foster effective risk minimization and risk management practices.

The reporting requirements for licensed pipelines are broken into three categories:

- Accidents / Escapes / Ignitions
- Integrity Assessment / Monitoring
- Operational Performance

All of these require different actions to provide protection, but the combination of all actions should ensure the safety and integrity of the pipeline assets.
2. Accidents Escapes and Ignitions

This section of the Report deals with accidents, escapes, ignitions and injuries or property damage. Incidents occurring on high pressure pipelines can have significant consequences and may result in serious harm to people, property and/or the environment.

The items that are reported within this section are:

- Near Misses
- Incidents\(^1\)
- Loss of Containment (LOC)
- Ignitions
- Injuries\(^2\)
- Property damage.

A detailed definition of the above items is located in the reporting template.

The main Key Performance Indicators are identified below in Table 2.1 and shown in Chart 2.1.

**Table 2.1 Key Performance Indicators [Blue columns shown in Chart 2.1]**

<table>
<thead>
<tr>
<th>Year</th>
<th>Near misses per 1,000 km</th>
<th>Incidents per 1,000 km</th>
<th>Loss of Containment per 1,000 km</th>
<th>Ignitions per 1,000 km</th>
<th>Injuries per 1,000 km</th>
<th>Damage per 1,000 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>1.23</td>
<td>0.41</td>
<td>0.41</td>
<td>0</td>
<td>0.62</td>
<td>0</td>
</tr>
<tr>
<td>2013/14</td>
<td>1.23</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.21</td>
<td>0</td>
</tr>
<tr>
<td>2014/15</td>
<td>1.64</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2015/16</td>
<td>1.64</td>
<td>0.41</td>
<td>0</td>
<td>0</td>
<td>0.20</td>
<td>0</td>
</tr>
<tr>
<td>2016/17</td>
<td>3.25</td>
<td>1.02</td>
<td>0</td>
<td>0</td>
<td>0.41</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^1\) Incident - Any third-party activity where contact is made with the pipeline, whether or not the pipeline suffers a loss of containment and/or damage.

\(^2\) Injury - A person is injured and the pipeline or the pipelines easement area has played a part in the incident occurring.
Chart 2.1 Incidents on NSW Pipelines per 1,000 km

Chart 2.2 NSW Pipeline Injuries & Damage per 1,000 km

Injuries on licenced pipelines remain low, with less than one per 1,000 km.
Chart 2.3 below is an index of the total number of loss of containment (LOC) incidents per time-weighted-average of 1,000’s km pipeline. This index is an internationally recognised measure of pipeline performance and reliability.

\[
LOC \text{ Index} = \frac{\text{Total No LOC incidents}}{\text{Time weighted average per 1,000 kms pipeline}}
\]

Chart 2.3 Loss of Containment Index
3. Integrity Assessment / Monitoring

This section reviews the integrity of the pipeline and the monitoring activities that are performed to reduce the possibility of accidents or incidents occurring on or around the pipeline.

The items that are reported within this section are:
- Integrity Assessment
- In-line Inspections
- Field Inspections
- Cathodic Protection (CP)
- Pipeline Patrols
- One-Call Systems
- Supervised Activity around the Pipeline
- Coating Defects
- Landowner Liaison

A detailed definition on the above terms and what is required to be reported is available within the reporting template.

The main KPIs are identified below in the Table 3.1

**Table 3.1 Key Performance Indicators** [Blue columns shown in Chart 3.1]

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Supervised Activities per 1,000 km ³</th>
<th>Percentage that contacted “One-Call” system</th>
<th>Defects identified requiring attention per 1,000 km</th>
<th>Percentage of Landowners Contacted</th>
<th>Percentage of CP units operating correctly</th>
<th>Percentage of pipeline covered by CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>1,366.74</td>
<td>95.22%</td>
<td>62.03</td>
<td>85.28%</td>
<td>100.00%</td>
<td>99.99%</td>
</tr>
<tr>
<td>2013/14</td>
<td>1,706.87</td>
<td>96.08%</td>
<td>56.66</td>
<td>98.61%</td>
<td>100.00%</td>
<td>99.44%</td>
</tr>
<tr>
<td>2014/15</td>
<td>1,622.64</td>
<td>95.89%</td>
<td>109.94</td>
<td>99.44%</td>
<td>93.43%</td>
<td>99.37%</td>
</tr>
<tr>
<td>2015/16</td>
<td>1,058.46</td>
<td>95.55%</td>
<td>64.44</td>
<td>97.02%</td>
<td>99.53%</td>
<td>99.99%</td>
</tr>
<tr>
<td>2016/17</td>
<td>1,412.44</td>
<td>99.41%</td>
<td>59.42</td>
<td>98.12%</td>
<td>99.54%</td>
<td>99.43%</td>
</tr>
</tbody>
</table>

As Table 3.1 shows, NSW Pipeline Operators continue to operate their assets in a safe and reliable manner with all KPIs remaining strong. Legislation in NSW requires third parties or contractors to contact the One-Call system (“1100”) prior to any excavation or work near assets which is helping to prevent serious incidents. Although a small percentage of contractors are not using this service, over 95% of the time notification was made via the One-Call system. We believe this will continue to improve as more contractors, and the public in general, make a habit of calling the One-Call system before beginning work near pipeline assets.

³ These figures include Licensed Pipelines and other assets, such as gas distribution networks.
Chart 3.1 Integrity Activities & Monitoring

Note: There is no landowners contact frequency specified in AS 2885.

Chart 3.2 Third party activities supervised by pipeline operators per 1,000 km

Note: this chart includes activities near some gas networks, gas mains and unlicensed pipelines.
4. Operational Performance

Pipeline operational performance monitoring is important as this action maintains what is recognised as ALARP procedures to mitigate incidents.

The items that are reported within this section are:

- Loss of Operations
- Details of any unplanned or abnormal incidents that could have a long-term effect on the safety on the pipeline
- Emergency Simulations
- Non-compliances identified by the independent auditor

A more detailed definition on the above terms and what is required to be reported is available within the reporting template.

The main KPIs are identified below in the Table 4.1 and in the chart below.

Table 4.1 Pipeline operations events

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours Not Operational</th>
<th>Lost operations per 1,000 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/14</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>2014/15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2015/16</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>2016/17</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Chart 4.1 Lost Operations per 1,000 km

Lost Operations per 1,000 km

Operational Incidents /1,000 KM
Emergency Simulations & Non-compliance

NSW Licenced Pipeline operators are required to conduct annual emergency simulations and to conduct annual audits of their Pipeline Management System. Any areas of non-compliance found must be resolved as soon as practicable.

Table 4.2

<table>
<thead>
<tr>
<th>Year</th>
<th>Emergency Simulations</th>
<th>Audit Non-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>22</td>
<td>49</td>
</tr>
<tr>
<td>2013/14</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>2014/15</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>2015/16</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>2016/17</td>
<td>16</td>
<td>33</td>
</tr>
</tbody>
</table>

Chart 4.2

5. Conclusion

The main objective of the Pipelines Regulatory framework is to achieve safe and reliable operations NSW pipelines and to protect the workers, the public and the environment.

The serious non-compliances are followed-up by the department to ensure that appropriate corrective actions are taken.

Based on the statistics contained within this report¹, we can safely conclude that NSW Pipeline Operators continue to manage their assets in a safe and reliable manner, providing a quality supply of gas, petroleum and other products to consumers.

We believe that the incorporation of pipeline management systems in the 2013 Pipelines Regulation is enhancing the safety performance of pipeline operators in NSW.

¹) Some data revisions from past reports are reflected in this report.