

Gas and Pipeline Infrastructure Safety Performance Report

2018–19



Contents

05 Industry Overview

25 Licensed Pipelines

47 Non-licensed Gas Infrastructure

66 Natural Gas Retail

81 Appendix A



Industry Overview



Contents

07		Director's report
08		General Manager's report
10	1	Introduction
11	2	Ensuring compliance and the regulatory response
11	2.1	Educate
12	2.2	Encourage
12	2.3	Warn
12	2.4	Enforce
14	2.5	Prosecute
15	3	Reportable safety incidents
15	3.1	Reportable incident consequences
16	3.2	Reportable incident causes
17	3.3	Reportable incidents by industry group
22	4	Prioritisation of focus and the strategic audit plan
23	5	The structure of the GPI Safety Performance Report

Director's report

This is the sixth gas and pipeline infrastructure report Energy Safe Victoria (ESV) has produced. Victoria has not observed a major adverse event associated with gas and pipeline infrastructure since the 1998 Longford disaster. Victoria has a strong regulatory framework and a good safety record. However, we must remain vigilant, both of our regulatory practices and of industry performance.

We continue to observe a maturing of organisations that are working closely with us to tackle issues like third party interference, as well as establishing effective liaison programs and assisting with delivering pipeline awareness presentations to over 30 councils.

In addition to operating under a safety case regime and undertaking more audits of Safety Management Systems than ever before, the industry has become more engaged in sharing its lessons and ideas to uniformly address strategic safety issues. While considerable work is being done to monitor Safety Management Systems and, where necessary, realign regulated entities to achieve full compliance to meet their safety obligations, the focus on regulators has also shifted in a rapidly evolving regulatory environment.

Both the Financial Services Royal Commission and the Aged Care Royal Commission have shown that regulators are expected to hold duty holders to account to minimise as far as practicable risk and harm and systemic bad behaviour in the industries they regulate. The tolerance for risk and the associated harm that may occur has diminished significantly over recent years. Regulators are expected to not only “test, challenge, and expose” the performance of businesses but also to take action and enforce and communicate this activity transparently. In this way assurance can be provided to both the community and government.

To achieve this, new skills will be needed—in data analytics, in stakeholder management and engagement, in community and industry education. By moving to a commission structure with a more diverse range of experts, ESV will have the leadership and broader wisdom needed to support the organisation into the future.

I commend this, the sixth and my last, Gas and Pipeline Infrastructure Safety Performance Report.



Paul Fearon
Director of Energy Safety

General Manager's report

(Gas and Pipeline Safety and Technical Regulation)

Over the years, the Gas and Pipeline Safety Performance Report has sought to cover a number of important aspects involving the management of gas infrastructure and pipelines. While keeping to its overall objectives to drive safe outcomes, ESV has sought, each year, to focus on a different aspect of integrity management that is fundamental to achieving community safety. This year, the focus involved broadening the range of information being collected and tested, and gathering evidence on activities ESV regulates via its comprehensive audit program.

ESV's audit program

There has been an increased focus on delivering assurance on the integrity of construction activity by gas distribution asset owners and their management teams. While the benefits of these improvements will not be seen immediately, the impact on operational integrity is expected to be substantial. ESV has tested and challenged the governance systems of the asset owners. For example, where an asset owner's contractor audit activities have previously focussed on Occupational Health and Safety (OH&S), they are now more closely aligned to the audit framework used by ESV, which focusses on asset integrity. At times, asset owners are also using external auditors to provide objective surveillance of safety and operational activity, as well as setting their own Key Performance Indicators (KPI), which are increasingly visible to their own senior management and to ESV through periodic reporting.

The provision of adequate oversight by senior management within an organisation and the assurances provided to ESV remain an ongoing focus, and at times remains a concern, given the occasional differences in information being provided to ESV by asset owners when compared to contractors and on-site personnel.

The distribution businesses have demonstrated their intent to improve the oversight of contractors and are putting mechanisms in place to do so. This is reflected in the downward trend in non-compliances over the last year. ESV is now able to focus on more detailed aspects of non-compliance to drive continual improvement.

Asset owners are ultimately responsible for all work done on their infrastructure, and adequate assurance from senior management and effective, long-term, and sustainable rectification of audit findings remains fundamental to delivering good governance.

Long-term workmanship

As stewards of the gas distribution network, the community expects asset owners to maintain their infrastructure's long term safety. As a result, ESV monitors network construction to make operational shortcomings increasingly transparent, particularly where an asset is being transferred to a new custodian.

In terms of the ongoing mains renewal works, which includes work to renew assets across Metropolitan Melbourne, ESV is responsible for ensuring work is undertaken to the Australian standard and in accordance with the asset owner's procedures (as accepted by ESV). The Australian Economic Regulator (AER) determines the amount of money available for capital works including the Mains Replacement Program. While asset owners are ultimately the stewards of their assets, ESV will be seeking greater consistency in terms of the risk profiles asset owners are presenting to the Safety Regulator and the Economic Regulator for the safe management of their assets in the short, medium, and long term.

ESV will also be monitoring asset management to ensure it meets long-term needs as well as immediate integrity requirements, and will require asset owners to be transparent about works being undertaken. A number of factors have contributed to delays in commencing works in inner Melbourne and the CBD, including contract selection, liaison with local council and other permit issuing bodies, and constraints in scheduling works in areas where construction activity is already quite high (for example, the Metro Tunnel and water mains replacement).

ESV will continue to closely monitor the mains renewal work, which will include carrying out overnight inspections.

Pipeline awareness program

In 2013, ESV formed the Land Development around Pipelines (LDAP) working group, with representation from government, agencies and industry, in response to advice from pipeline licensees concerning their lack of control over land use changes around pipelines. Following submissions to the Major Hazard Facilities Advisory Committee in 2016, and more recent workshops with Pipeline Licensees, ESV commenced an awareness program with over 40 councils and council planners, created a series of fact sheets for ESV's website, and developed an options paper outlining how the planning system can better recognise pipelines.

ESV also advanced other initiatives, including ongoing involvement in the planning scheme amendment process and assistance with a planning panel, and finalising the preferred methodology for identifying pipelines and developing a common list of 'notifiable developments'. ESV also continued to advocate for statewide recognition of pipelines in the planning system, building on the government response to the Major Hazard Facilities Advisory Committee's recommendations. ESV surveyed all council planning departments to better understand their awareness of licensed pipelines. The results helped ESV develop an education program to increase the awareness among planners of this critical infrastructure.

Focus and priorities

In terms of its focus and priorities for the next reporting period, ESV will further expand and improve the Gas and Pipeline Infrastructure (GPI) Safety Performance Report with the objective of providing the community with a transparent and objective summary of the sustainable health of gas and pipeline infrastructure. The report will give a high level summary of the status of asset integrity as well as the management of the systems that combine to ensure ongoing safety and supply. This is likely to include the outcomes from integrity management programs such as in-line inspections, Direct Current Voltage Gradient (DCVG) and scheduled maintenance, which all provide an objective summary of the current integrity of the system, as well as a review of its long-term life expectancy through the results of remaining life reviews.

This analysis will be designed to show the health of Victoria's gas and pipeline infrastructure and asset maintenance and improvement, with the goal of providing safety assurance for the Victorian community.

In addition to expanding on the information the GPI Safety Performance Report provides, ESV will also concentrate on reducing the occurrence of asset damage by addressing common causes, with the aim of achieving a 20% reduction in hits to gas mains by 2022, through gas distribution business engagement, testing the robustness of physical or procedural threat barriers, and by taking proportionate action against individuals or entities that damage gas infrastructure in accordance with ESV's approved enforcement strategy.

ESV also aims to achieve a 20% reduction in non-conformance identified during pipeline inspections by addressing common causes and increasing audits and inspections of mains and services to ensure the distribution businesses improve their oversight of subcontracting services, and so reduce public risk (specifically around leaks).

In addition to increasing its audits, ESV will also improve the way it records, analyses, and communicates its findings to better address systemic issues.



Steve Cronin
General Manager
Gas and Pipeline Safety and Technical Regulation

1. Introduction

Energy Safe Victoria (ESV) is responsible for the technical regulation and safety of Victoria's pipelines and electricity and gas sectors.

ESV's mission is to make a real difference in the safe supply and use of energy, and to be recognised nationally as the leader in the regulation of electricity, gas and pipeline safety. ESV protects and assists the community by: working in consultation with the industry and community to facilitate safety outcomes; developing and communicating safety and efficiency requirements and programs; monitoring, auditing and enforcing compliance with the safety regulations and Acts; and administering licensing, registration and safety systems that maintain standards and skills.

By global standards, the Australian gas and pipeline industry has an excellent record of safety performance. While its primary role is to encourage compliance and improved safety performance throughout Victoria's pipeline, electricity, and gas sectors, ESV performs its functions and exercises its authority to achieve and maintain the objectives stated by the *Electricity Safety Act 1998*, the *Gas Safety Act 1997*, and the applicable objectives of the *Pipelines Act 2005*.

ESV also continues to focus attention on ongoing and long-term safety outcomes, while responding to emerging risks and issues via its monitoring and compliance activities, educational initiatives, and enforcement strategy. ESV's Corporate Plan and Annual Report also provide information about ESV's aims and objectives¹.

In terms of ESV's broader functions, the Gas & Pipeline Infrastructure Safety (GPIS) Section is responsible for the industry groups that are the subject of this report. These include Licensed Pipelines (comprising natural gas transmission pipelines, non-natural gas pipelines, and the Australian Energy Market Operator (AEMO)), Non-licensed Gas Infrastructure (comprising natural gas distribution, reticulated LP Gas and landfill gas, LP Gas retail, and LNG retail), and Natural Gas Retail.

The GPI Safety Performance Report

The 2018-19 GPI Safety Performance Report (covering the Licensed Pipelines, Non-licensed Gas Infrastructure, and Natural Gas Retail industry groups for the reporting period 1 July 2018 to 30 June 2019) delivers an overview of industry regulatory compliance by:

- providing information about safety performance trends over time
- informing government and the community about risk mitigation activities conducted by regulated entities
- reporting on ESV's activities and focus for managing compliance using efficient and effective regulation
- evaluating and reporting on the outcomes of risk-based regulation and taking proportionate enforcement action.

1 <https://www.esv.vic.gov.au/about-esv/reports-and-publications/>

2. Ensuring compliance and the regulatory response

ESV's compliance and enforcement strategy has two limbs:

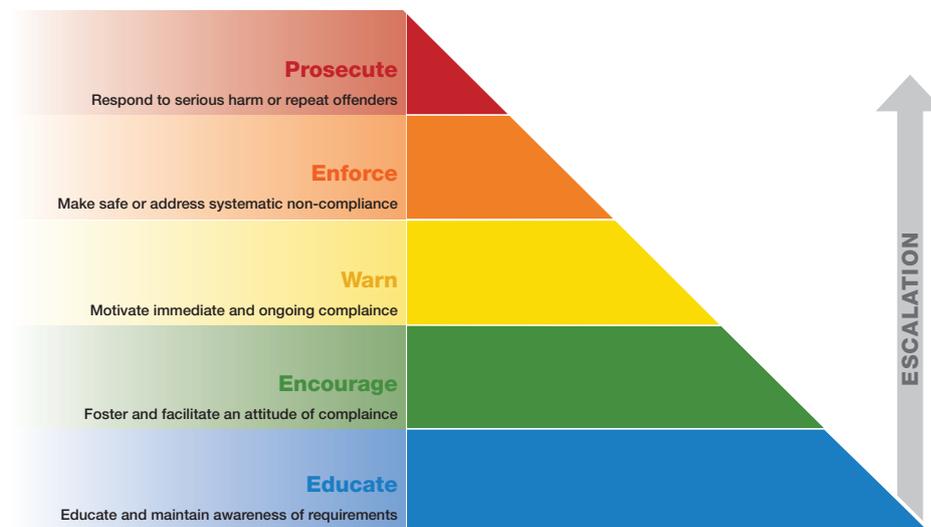
- Encouraging and facilitating cooperation with organisations willing to comply
- Taking proportionate enforcement action against organisations unwilling to comply.

ESV uses the enforcement pyramid, which is a regulatory approach advocated by Ayers and Braithwaite^{2,3} for:

- selecting compliance tools for a particular task
- progressive escalation of compliance issues (educate, encourage, warn, enforce, prosecute).

Figure 2-1 shows the common representation⁴ of the Enforcement Pyramid, which starts with education and escalates as necessary to prosecution.

Figure 2-1 – The Enforcement Pyramid



ESV follows a series of activities in line with each stage and only escalates to enforcement action when poor responses do not improve.

2.1 Educate

Educate and maintain awareness of requirements

ESV maintains close contact with relevant regulators, industry associations, and regulated entities to:

- actively communicate legislative requirements and changes to legislation through industry meetings and direct communication
- issue guidance material
- provide feedback to all regulated entities as part of its assessment of Safety Case and Safety Management Plan submissions
- work in partnership with regulated entities to address emerging risks and issues.

2 J. Braithwaite, Rewards and Regulation, Journal of Law and Society Volume 29, Number 1, March 2002, ISSN: 0263-323X pp 12-26.

3 Ayres & J Braithwaite, Responsive Regulation: Transcending the Deregulation Debate, Oxford University Press, New York, 1992.

4 The electricity, gas, and pipeline sector compliance and enforcement tools available under the legislation administered by ESV vary from sector to sector.

Industry consultation meetings

ESV's industry consultation meetings (held in December 2018 and June 2019) involved representatives from most industry groups, and the Safety Performance Report provides a synopsis of the content specific to each.

The meetings included an introduction to the revised Gas Safety (Safety Case) Regulations 2018, and the responses from regulated entities and their findings from major incident investigations, which enabled ESV to inform industry participants about initiatives throughout the reporting period.

Gas Safety (Safety Case) Regulations 2018

The new Gas Safety (Safety Case) Regulations were published on 22 October 2018. The regulations were remade with a focus on clarification and simplification, and are largely similar to the previous regulations but have been expanded to incorporate the content from the gas quality regulations (now revoked). Some of the changes included:

- incorporating provisions from the now revoked gas quality regulations
- a provision to exempt a Safety Case from any of the requirements of the regulations.

ESV has developed a new guideline, Gas Safety Case Preparation and Submission for Facilities and Pipelines, to assist with the preparation and submission of a Gas Safety Case.

2.2 Encourage

Foster and facilitate compliance

ESV actively engages regulated entities through compliance and field audits. Over the reporting period, ESV periodically met with all natural gas distribution business on a quarterly basis, carried out 60 compliance audits, 765 natural gas distribution and licensed pipeline inspections, and 100 licensed pipeline construction worksite inspections.

2.3 Warn

Motivate immediate and ongoing compliance (non-conformance notices)

Representing ESV's lowest enforcement level, non-conformance notices, which detail compliance requirements, most commonly arise from audits and inspections. ESV issued 28 non-conformances from compliance audits and 777 non-conformances from inspector audits.

In accordance with ESV's audit process, unless otherwise agreed with ESV, all audit findings were closed out within 60 days of the regulated entity being informed.

2.4 Enforce

Improvement Notices, Infringement Notices, Official Warnings, Prohibition Notices, and Directions

ESV issues a notice, warning, or direction after a serious incident or risk to safety, and specific action is required to avoid harm to people or property. Penalties exist for failing to comply.

Improvement Notices are issued for contraventions of the Gas Safety Act and Gas Safety Regulations, the Pipelines Act, and pipeline license conditions. Infringement Notices and Prohibition Notices are issued to gas companies and retailers for serious gas safety risks, and to pipeline licensees for serious risks to health, safety or the environment. Directions are issued for safety reasons and in emergencies.

Improvement Notices

Improvement Notices are used to stop ongoing or repeated breaches of the relevant Act or Regulations.

ESV did not issue any Improvement Notices during the reporting period.

Infringement Notices

Infringement Notices (or on-the-spot fines) can be issued for a range of offences against the Gas Safety Act and are a lower-cost alternative to prosecution for safety breaches.

The penalty for these types of offences is set at one-tenth of the maximum penalty prescribed in the Acts, which the recipient can elect to either pay within a set period or not pay and have the matter heard in court.

ESV issued five Infringement Notices during the reporting period relating to unauthorised excavation within three meters of a licensed pipeline and third party damage to gas mains and services.

Official Warnings

An Official Warning (pursuant to the Infringements Act) can be issued as an alternative to an Infringement Notice (for offences that can be dealt with by Infringement Notice).

Official Warnings outline a breach, instruct the person or organisation to comply in the future, and warn about further enforcement action if there is a failure to comply.

ESV issued 18 Official Warning letters during the reporting period relating to unauthorised excavation within three meters of a licensed pipeline and third party damage to gas mains and services.

Prohibition Notices

Prohibition Notices are only issued when there is an imminent or immediately serious risk to health and safety.

ESV did not issue any Prohibition Notices during the reporting period.

Directions

The Director of Energy Safety has the power to issue written directions to people or businesses to take particular action to address safety issues.

At any time, the Director of Energy Safety may require the complete revision of a gas company's Safety Case or may determine and impose a Safety Case. This is a last-resort power enabling ESV to ensure network safety and continuity of supply to the community, and has the potential to be a more severe sanction than prosecution.

The Director of Energy Safety did not issue any directions during the reporting period.

2.5 Prosecute

Prosecution usually occurs when there is significant risk, when harm has actually occurred, or when an organisation is unwilling to comply, and can stem from any of the provisions applying to regulated entities.

ESV did not prosecute any regulated entities or infringing parties during the reporting period.

3. Reportable safety incidents

Reportable safety incidents are defined by the:

- Gas Safety (Safety Case) Regulations 2008
- Pipelines Regulations 2017.

All regulated entities are required to comply with the reporting requirements this legislation defines. ESV's decision to investigate an incident is informed by a number of factors including the extent of injury, property damage, loss of supply, and the likelihood of mitigation measure improvements arising from the investigation.

This reporting period's reportable safety incidents are broken down into consequences and causes for assets involving licensed natural gas transmission pipelines, licensed non-natural gas pipelines, and gas distribution.

There were a total of 149 reportable safety incidents throughout the period:

- 13 licensed non-natural gas pipeline incidents
- 47 licensed natural gas transmission pipeline incidents
- 89 gas distribution incidents.

3.1 Reportable incident consequences

The reportable incidents with the most severe plausible consequences and the potential to cause death, injury and damage to property and the environment are categorised as:

- Fire, ignition.
- Near miss.
- Gas leak, escape.

Fire, ignition

Six incidents were reported to ESV involving 'Fire, ignition', with three injuries sustained but no fatalities, all of which involved natural gas mains and service infrastructure, with four caused by third party interference, and two due to natural causes⁵.

Near miss

Fifty-eight incidents resulted in 'Near miss' category consequences, which relates to works being undertaken within three metres of a licensed pipeline.

While these incidents potentially have high consequence outcomes, they also demonstrate the criticality of an effective pipeline patrol program as a last line of defence against third party damage, in addition to community liaison and awareness programs.

Gas leak, escape

Nineteen incidents resulted in 'Gas leak, escape' category consequences, which relates to unplanned gas release and leaks of product from licensed pipelines and gas distribution infrastructure.

The criticality of leaks depends on a number of factors, such as the location of the leak, the amount of product released, and the proximity to people and property. The leaks reported to ESV were low risk and repaired via general maintenance rather than requiring activation of an emergency response plan and regulatory direction or approvals.

5 Lightning strikes.

3.2 Reportable incident causes

The most common reportable incident causes are:

- Third party interference.
- Integrity failure.

Third party interference

The vast majority of 'Near miss' category consequences are still being caused by 'Third party interference'⁶ with 119 incidents reported (58 for licensed pipelines and 61 for natural gas distribution). Types of third party interference include:

- unauthorised excavation within three metres of a licensed pipeline
- any incident involving damage to or contact with a licensed pipeline
- works causing damage to natural gas distribution mains and services.

Historically, external interference represents the biggest threat to pipeline integrity and the environment if a loss of containment occurs. Like all significant or potentially high consequence outcome incidents, there are a number of contributing factors that include:

- asset owners failing to execute external interference control
- a generally low level of community awareness about safe excavation around underground assets
- a third party's failure to appropriately follow conditions of work in the vicinity of a buried pipeline.

Damage to natural gas distribution mains and services due to third party interference can involve mobilising emergency services, supply loss, and (more significantly) burn injuries if a gas ignition occurs. Incidents like this are often caused by third party contractors working on telecommunications and water infrastructure located near natural gas assets.

While the occurrence of incidents around licensed pipelines remains relatively low when compared with the distribution networks, the consequences can be serious, ESV continues to focus on ensuring pipeline licensees effectively execute their third party interference programs. ESV has been working with licensees to develop a broader understanding of the issues surrounding third party interference with licensed pipelines, and has developed a series of leading indicators. These leading indicators are providing valuable insight into the success or failure of a licensee's incident prevention mechanisms when compared with other, similar licensees. Additionally, the knowledge gained from incident data is helping to identify the most likely risks and develop strategies to address them.

Integrity failure

There were 17 incidents caused by 'Integrity failure'. While infrequent due to regular/periodic maintenance programs like mains and service renewal works, asset integrity failure (which can sometimes lead to gas escapes and domestic supply disruptions) has a number of underlying reasons including water in the mains, failure at valves, consumer meter regulator assemblies, and corrosion.

Systematic approaches to ensure the long-term integrity of assets depend on preventative maintenance, which is often preferred to corrective maintenance.

6 This relates to persons or entities that do not have a contractual arrangement with the asset owner.

3.3 Reportable incidents by industry group

3.3.1 Licensed Pipeline (non-natural gas) incidents

Thirteen reportable incidents involving non-natural gas pipelines were recorded by ESV during the reporting period. The greatest cause was third party interference. Where third party interference is identified, a review of external interference mitigation measures is required. This includes:

- reviewing the frequency of patrol activities to ensure they remain appropriate for the safe operation of the pipeline
- assessing the effectiveness of licensee awareness programs
- considering land use changes in the pipeline’s vicinity.

Table 3-1 lists the different causes and consequences by category that non-natural gas pipeline licensees are required to report to ESV. There were no cases of death, injury or damage to property or the environment.

Table 3-1 - Cause and consequence categories for non-natural gas pipeline incidents

Cause	Definition	Number
Integrity failure	Degradation of an asset or the inability for a system to deliver on its intended purpose (for example, corrosion).	2
Third party	Any individual or organisation that does not have a legal transaction with the relevant asset owner (for example, installation of electrical conduit within three metres of a licensed pipeline).	11

Consequence	Definition	Number
Minor leaks	An unplanned product release from the pipeline and requiring a maintenance repair including but not limited to the non-routine maintenance of leaking valves and flanges.	1
Near miss	Unauthorised excavation within three metres of a licensed pipeline.	12

Figure 3-1 and Figure 3-2 show the percentage breakdown of the different causes and consequences by category for the reporting period.

Figure 3-1 – Non-natural gas pipeline incident causes

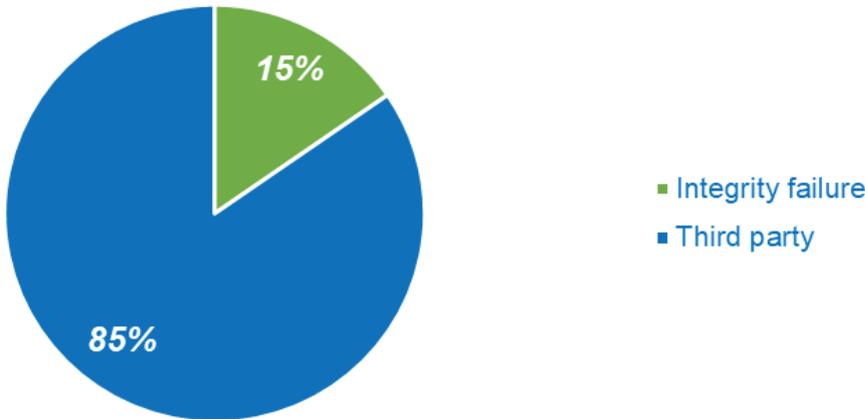
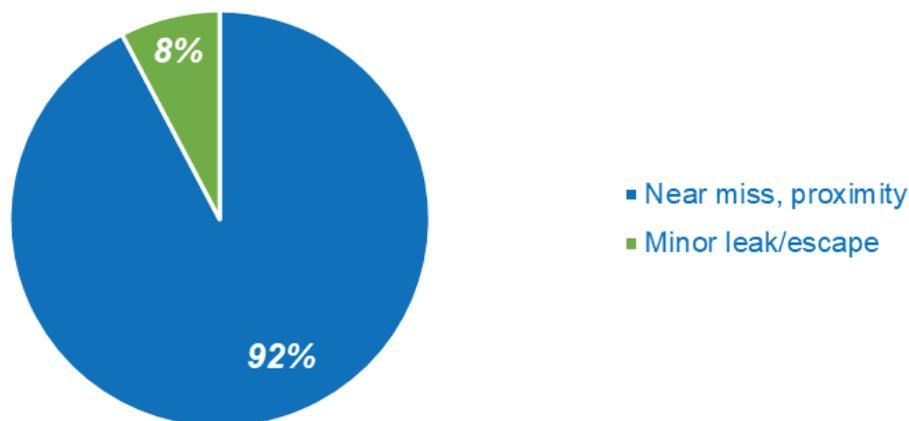


Figure 3-2 – Non-natural gas pipeline incident consequences



Licensed Pipeline (non-natural gas) KPI reporting

This reporting period represents the first time ESV has received a complete KPI dataset from this industry group segment. Findings included:

- Fifteen ‘conditions of work’ breaches. While these are not reportable incidents, they are an indication that licensees should continue to monitor the activities of third parties known to be working in the vicinity of licensed pipelines (1,581 ‘conditions of works’ were issued, and the number of breaches recorded represents less than 1% of this).
- Three leaks⁷, with one being a reportable incident. On 5 September 2018, a loss of containment occurred at a thermal relief valve on licensed pipeline PL283. The incident report was submitted to ESV and preventative measures implemented by the licensee. The other leaks were of minor consequence, did not pose any threat to the public, and were addressed by maintenance crews.

3.3.2 Licensed Pipeline (natural gas transmission) incidents

ESV recorded 47 reportable incidents involving natural gas transmission pipelines during the reporting period. While there were 46 near misses reported involving excavation within three meters of a licensed pipeline, no damage occurred.

While a third of the ‘Near miss’ incidents recorded were caused by contractors working on National Broadband Network (NBN) infrastructure, third party encroachment incidents were generally caused by contractors from a combination of industries including telecommunications, water, and civil infrastructure, with 20% of contractors encroaching within three meters of a licensed pipeline not having completed a Dial Before You Dig (DBYG) enquiry.

In general, the majority of contractor incidents are from a failure to:

- follow the DBYG process
- get a permit for work or engage an on-site supervisor
- follow conditions of work issued by the licensee.

In this case, damage was avoided due to a number of physical and procedural mitigation measures designed to provide controls that prevent damage to pipelines, and depth of cover in particular, which appears to be the most critical physical barrier for successfully preventing third party damage from excavation.

Table 3-2 lists the different causes and consequences by category that gas transmission pipeline licensees are required to report to ESV. There were no cases of death, injury, or damage to property or the environment.

⁷ Submitted through quarterly KPI reports.

Table 3-2 – Cause and consequence categories for natural gas transmission assets

Cause	Definition	Number
Operation error	Misuse of an operating system or failure to execute mitigation procedures (for example, management of Supervisory Control and Data Acquisition).	1
Third party	Any individual or organisation that does not have a legal transaction with the relevant asset owner (for example, installation of electrical conduit within three metres of a licensed pipeline).	46

Consequence	Definition	Number
Gas leak, escape	An unplanned gas release.	1
Near miss	Unauthorised excavation within three metres of a pipeline.	46

Figure 3-3 and Figure 3-4 show the percentage breakdown of the different causes and consequences by category for the reporting period.

Figure 3-3 – Natural gas transmission incident causes

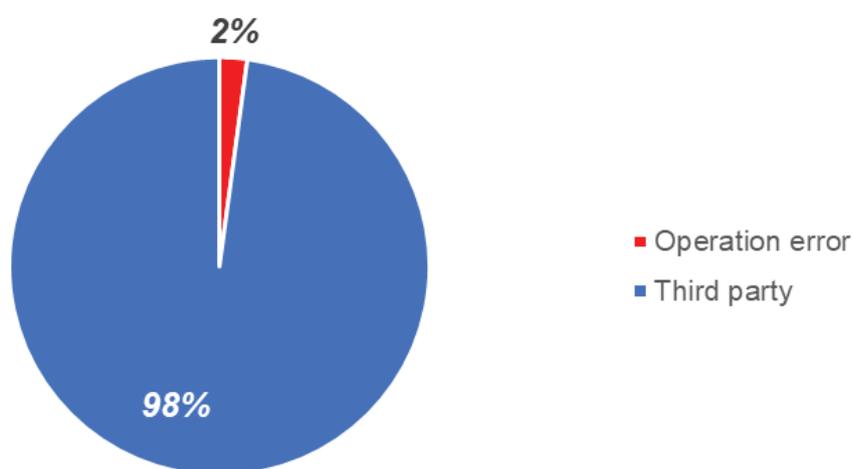
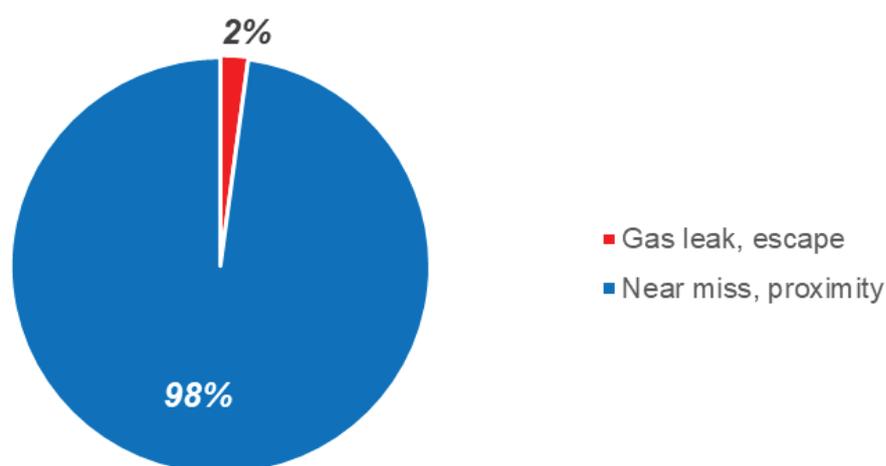


Figure 3-4 – Natural gas transmission incident consequences



3.3.3 Natural gas distribution incidents

ESV recorded 89 reportable incidents involving natural gas distribution during the reporting period. With 69% being attributed to third-party works impacting mains and services, ESV has focused on reducing the number of these incidents and initiated the Gas Asset Damage Mitigation (GADM) Project in 2017 to explore solutions to this ongoing problem. See Section 13.1.1 for incident statistics involving third-party damage to mains and services, and Section 15.1 for more information about the GADM project.

These incidents are increasingly being caused by augers and directional drills, which accounted for around 10% of the incidents involving natural gas distribution infrastructure (the rest attributed to excavators and manual hand digging methods).

Table 3-3 lists the different causes and consequences by category that natural gas distribution is required to report to ESV. There were no cases of death or damage to property or the environment, but four injuries occurred due to the ignition of unplanned gas releases.

Table 3-3 – Cause and consequence categories for natural gas distribution assets

Cause	Definition	Number
Integrity failure	Degradation of an asset or the inability for a system to deliver on its intended purpose (for example, corrosion).	15
Nature	The effect of a natural occurrence (for example, a lightning strike or subsidence).	4
Operation error	Misuse of an operating system or failure to execute control mitigation procedures (for example, management of Supervisory Control and Data Acquisition).	1
Third party	Any individual or organisation that does not have a legal transaction with the relevant asset owner (for example, installation of electrical conduit within three metres of a licensed pipeline).	61
Unknown	Undetermined cause of incident.	8

Consequence	Incidence
Fire, ignition	6
Gas asset damage	59
Gas leak, escape	17
Loss of gas supply	6
Off-specification gas	1

Figure 3-5 and Figure 3-6 show the percentage breakdown of the different causes and consequences by category for the reporting period.

Figure 3-5 – Natural gas distribution incident causes

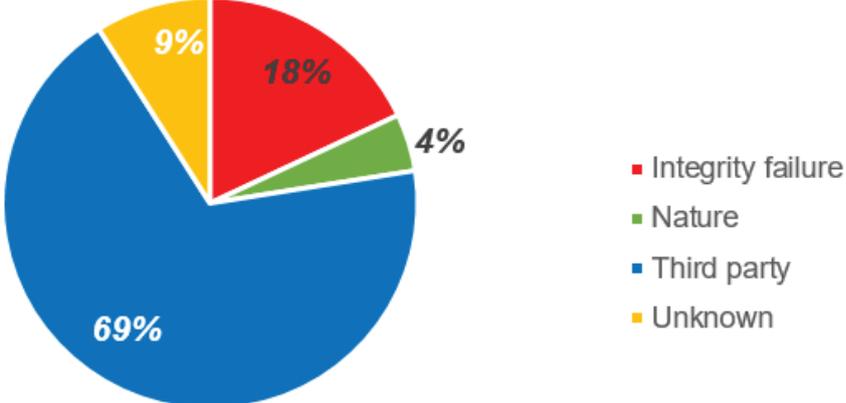
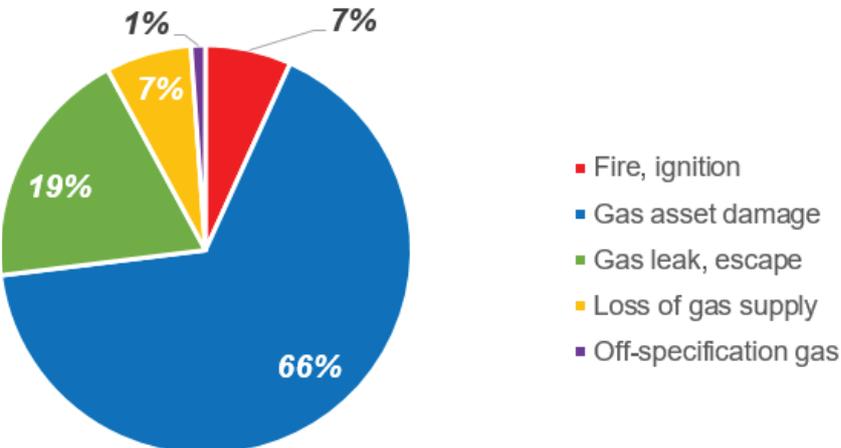


Figure 3-6 – Natural gas distribution incident consequences



4. Prioritisation of focus and the strategic audit plan

ESV reviews its strategic audit priorities at the start of each reporting period. While the acceptance of Safety Cases and Safety Management Plans remained a focus (compared to last year's plan), the priorities for the reporting period included emergency planning and preparedness, and the cathodic protection of buried assets, which were addressed through the findings/outcomes of the audit program.

In addition to the audit program, ESV also focused on establishing critical policies, guidelines and actions for:

- developing a coordinated policy for land development around existing pipelines, and ensuring that appropriate protection for the asset and the community is managed
- damage to natural gas distribution network mains and services, and minimising the likelihood of occurrence
- focussing on the clear delineation of regulatory accountabilities for the LPG industry
- verifying the natural gas retail industry's process for establishing new meter installation compliance.

5. The structure of the GPI Safety Performance Report

GPI safety performance reporting covers three industry groups:

- **Licensed Pipelines** (comprising natural gas transmission pipelines, non-natural gas pipelines, and the gas market operator (AEMO)).
- **Non-licensed Gas Infrastructure** (comprising natural gas distribution, reticulated LP Gas and landfill gas, LP Gas retail, and LNG retail).
- **Natural Gas Retail.**

Each industry group report covers five main areas:

- **Monitoring, auditing and inspection** discusses ESV's activities and findings from monitoring the existence and efficacy of threat-barriers, including basic safety framework documentation, self-reporting and KPIs, and audit outcomes.
- **Acceptances and approvals** reports on the status of safety framework documentation submissions and approvals, and highlights any emerging issues.
- **Education** discusses ESV's engagements with industry and the community to address emerging risks and facilitate safety outcomes via education.
- **Compliance and enforcement** provides information about ESV's Compliance and Enforcement Policy and Compliance Strategy as well as any compliance and enforcement activities ESV was required to undertake.
- **Focus and priorities for 2019-20** discusses those areas within the industry group that ESV intends to prioritise for the coming reporting period.

Licensed Pipelines



27	6	Licensed Pipelines - Introduction
27	6.1	The Licensed Pipelines Industry Group
29	6.2	Licensed Pipelines Industry Group changes
29	6.3	Focus and priorities during 2018-19
30	7	Licensed Pipelines - Monitoring, auditing and inspections
30	7.1	Compliance documentation and key mandated requirements
31	7.2	Self-reporting and KPIs
31	7.3	ESV audits
36	8	Licensed Pipelines - Acceptances and approvals
36	8.1	Safety Management Plans and Safety Cases
38	8.2	Operational works approvals
40	9	Licensed Pipelines - Education
40	9.1	Ongoing initiatives
41	9.2	New initiatives
42	10	Licensed Pipelines - Compliance and enforcement
42	10.1	Incident investigation outcomes
44	11	Licensed Pipelines - Focus and priorities for 2019-20

6. Licensed Pipelines - Introduction

6.1 The Licensed Pipelines Industry Group

The Licensed Pipelines Industry Group, involving licensed natural gas transmission pipelines, licensed non-natural gas pipelines and the market operator is characterised by:

- a single large business operating the main Victorian natural gas transmission grid (APA VTS Australia (Operations) Pty Ltd)
- operational oversight from the Victorian market operator (AEMO)
- businesses operating other licensed natural gas transmission pipelines
- businesses operating other licensed pipelines (conveying non-natural gas products like crude oil, LP Gas, and unprocessed natural gas).

These entities all operate under an outcome-based regime that imposes a general duty to minimise risks to people, property and the environment, and must submit a Safety Case and/or a Safety Management Plan.

Table 6-1 lists the organisations in this industry group as at 1 July 2019.

Table 6-1 - Licensed Pipelines

Regulated entity	Pipeline licences
Licensed natural gas transmission pipelines	
APA VTS Australia (Operations) Pty Ltd	36, 50, 67, 68, 75, 78, 81, 91, 101, 107, 108, 112, 117, 120, 121, 122, 124, 125, 128, 129, 131, 132, 134, 135, 136, 141, 143, 145, 152, 155, 162, 164, 168, 171, 176, 178, 182, 202, 227, 231, 238, 252, 253, 266
APA Orbest Gas Plant Pty Ltd	230
APT Pipelines (SA) Pty Ltd	255
AusNet Gas Services Pty Ltd	16, 17, 18, 19, 54, 57, 64, 76, 80, 82, 84, 90, 97, 99, 113, 184, 188, 189, 190, 191, 192, 193, 195, 196, 197, 198, 199, 200, 203, 221, 235, 256, 257
Australian Gas Networks (Vic) Pty Ltd	11, 43, 44, 49, 61, 62, 66, 85, 102, 103, 115, 137, 139, 167, 186, 187, 201, 206, 207, 208, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 222, 223, 224, 226, 267
Lattice Energy Ltd ³	244
Gas Pipelines Victoria Pty Ltd	179
Jemena ¹	232, 247
LYB Australia Ltd	234
Multinet Gas ²	28, 33, 40, 47, 51, 56, 77, 100, 142, 205, 209, 210, 261, 265, 276
South East Australia Gas (Mortlake) Pty Ltd	259
South East Australia Gas Pty Ltd	239
Tasmanian Gas Pipeline Pty Ltd	236
Licensed non-natural gas pipelines	
Air Liquide Australia Limited	154, 160, 161, 173
Lattice Energy Ltd	237, 240, 250, 006009
Lattice Energy Ltd ³	243
BHP Billiton	228
BOC Gases Australia Ltd	87, 89, 109, 110, 111, 157

Regulated entity	Pipeline licences
BP Australia Pty Ltd ⁴	9, 22, 58, 59, 60
Cooper Energy (CH) Pty Ltd	251
Cooper Energy (PB) Pty Ltd	006631
Cooper Energy (SOLE) Pty Ltd	006238
Elgas Ltd	172
Esso Australia Pty Ltd ⁵	1, 2, 27, 34, 35, 39, 42, 46, 53, 63, 96, 98, 116, 126, 133, 149, 150, 233, 282
Exxon Mobil Aviation ⁶	118, 119
Incitec Pivot Limited	104
Ixom Pty Ltd	277
Mobil Oil Australia Pty Ltd	283
Mobil Refining Australia Pty Ltd	37, 38, 55, 69, 70, 71, 72, 73, 74, 151
Qenos Pty Ltd	258
Stolthaven ⁷	138
United Terminals Pty Ltd	153
Viva Energy Australia Pty Ltd ⁸	3, 5, 6, 7, 8, 10, 65, 262, 263
Notes:	
1. Combines Jemena EGP and VicHub for reporting purposes.	
2. Combines Multinet Gas Distribution Partnership and MG (DB No1) and MG (DB No2) for reporting purposes.	
3. The sales gas pipeline (244) and raw gas pipeline (243) are covered by a separate Safety Case and Safety Management Plan respectively.	
4. Licence 58, 59, and 60 form part of an un-incorporated Joint-Venture (JV) between BP Australia, Viva Energy Australia and Caltex Australia Petroleum. Viva Energy Australia is the manager of the pipelines on behalf of the JV.	
5. Includes Esso Australia Resources Pty Ltd for reporting purposes.	
6. Exxon Mobil Aviation is a representative of Mobil Oil Australia Pty Ltd, which shares a licence between a group of entities.	
7. Combines Stolthaven Terminals Altona Pty Ltd and Stolthaven Properties Pty Ltd for reporting purposes.	
8. Includes WAG Pipeline Pty Ltd and Viva Energy Refining Pty Ltd.	

6.2 Licensed Pipelines Industry Group changes

Changes to the Licensed Pipelines Industry Group's licence holders during the reporting period include the surrender or cancellation of:

- BOC Gases Australia Ltd pipeline licence 88 and 127
- Coogee Energy Pty Ltd license PL158 and 159
- Qenos Pty Ltd license PL130 and PL144.

6.3 Focus and priorities during 2018-19

ESV focused on its ongoing five-yearly safety management framework documentation reviews during the reporting period. At the conclusion of the 2018-19 reporting period:

- 4 Safety Cases and 2 Safety Management Plans were accepted
- 5 Safety Cases and 6 Safety Management Plans were due.

ESV has also focussed on:

- cathodic protection systems and the effectiveness of corrosion protection for buried licensed pipelines
- external interference, in particular the:
 - implementation of pipeline patrol procedures
 - competency of pipeline patrollers in terms of their understanding of procedures typically addressed by training
- awareness programs concerning land use and development around pipelines, which is being addressed through information sessions to 43 councils.

7. Licensed Pipelines - Monitoring, auditing and inspections

7.1 Compliance documentation and key mandated requirements

Regulated entities are required to have a range of up-to-date compliance documents⁸ that detail the entity's safety management framework and provide a benchmark for ESV's ongoing compliance audits.

Compliance document types specific to this industry group include:

- Safety Cases and Safety Management Plans⁹
- as-built drawings and route plans
- formal delegations¹⁰
- Pipeline Integrity Management Plans and subordinate plans, such as plans for repair, fracture control and remaining life review
- De-commissioning Plans for suspension or abandonment¹¹
- Emergency Response Plans.

7.1.1 Compliance documentation

Safety Management Plan and Safety Case revisions must to be submitted in accordance with the Pipelines Act and Gas Safety Act. See Section 8.1 for more information about the status of these revisions.

Seventeen pipeline licensee¹² Safety Management Plan and Safety Case revisions were submitted for ESV's review during the reporting period, with six accepted, and oversight of the acceptance provided by ESV's Gas Safety Case Evaluation Acceptance (GSCEA) Panel¹³. (By comparison, in the previous reporting period fifteen revisions were submitted, and three Safety Cases and four Safety Management Plans were accepted.) The GSCEA panel provides a formal mechanism for governance of risk levels accepted by ESV when making a regulatory (acceptance) decision.

Emergency response exercises

Licensed Pipeline Industry Group members are expected to undertake emergency response exercises every year¹⁴. The emergency response exercises and their corresponding reports are intended to demonstrate that:

- responsible persons, as identified in the endorsed Emergency Response Plan, will be directly involved
- the exercise (with supporting documentation) reflects a realistic facility/pipeline incident event that tests both response and recovery protocols
- lessons have been learned, including recommendations and any further actions taken to ensure ongoing improvement.

ESV audited for emergency preparedness in the previous reporting period and continues to monitor and review emergency response exercise after-action review reports.

8 Legislation and standards require that Safety Cases and Safety Management Plans are reviewed at least every five years to the satisfaction of ESV.

9 Natural gas transmission pipeline licensees generally have Safety Cases and non-natural gas pipeline licensees have Safety Management Plans.

10 The person responsible for the operation of a facility as declared under the Gas Safety Act and in accordance with AS 2885.

11 De-commissioning Plans are required if the pipeline will be maintained in a non-flowing condition for an extended period.

12 There are 20 non-natural gas pipeline licensees and 12 natural gas transmission pipeline licensees and one market operator.

13 ESV consolidated the Gas Safety Case Evaluation Acceptance Panel and the Electricity Safety Management System Evaluation Acceptance Panel, and their supporting terms of reference, to strengthen consistent assurance processes.

14 Natural gas pipeline licensees must conduct at least two exercises and non-natural gas pipeline licensees must conduct at least one. ESV does not count actual pipeline incidents as emergency exercises.

7.1.2 Annual safety and integrity performance reporting

As detailed by clause 11 (1c) of the Pipelines Regulations 2017, licensees are required to report annually on their pipeline safety and integrity maintenance performance.

All entities from the Licensed Pipeline Industry Group reported the Annual Safety and Integrity Performance reports covering the 2018-19 reporting period. The findings regarding individual submissions are validated with an entity's Safety Case or Safety Management Plan and addressed directly with the licensee.

7.2 Self-reporting and KPIs

ESV has agreements with regulated entities (underpinned by legislation) to provide safety-related information¹⁵, typically covering:

- incident statistics and unauthorised works within three metres of a licensed pipeline
- pipeline integrity management reporting
- periodic compliance reporting.

This information helps ESV to monitor a regulated entity's performance against its Safety Case and provide assurance that risks are being managed and controls are effective.

7.2.1 Periodic compliance reporting

There is an agreed reporting framework with this industry group for the submission of quarterly KPI reports, which are expected to be submitted to ESV within 20 business days of the end of the reported quarter.

Table 7-1 lists the regulated entities late to submit KPI quarterly reports on more than one occasion during the reporting period.

Table 7-1 – Periodic KPI quarterly report late submissions

Licensed natural gas transmission pipelines
None
Licensed non-natural gas pipelines
Stolthaven

7.3 ESV audits

7.3.1 Audit process

ESV's strategic audit planning process identifies its audit priorities and underpins the annual audit plan and any associated resource allocation. ESV audits are designed to test compliance with Safety Cases and Safety Management Plans in line with the risk-based strategic audit framework.

Audit findings are categorised in one of two ways:

- 'Observations' represent an isolated lapse or failure to comply with a specified requirement with the potential to lead to non-conformance and must be addressed within two months.
- 'Non-conformances' represent a failure to comply with specified requirements and must be addressed immediately or as otherwise agreed with ESV.

15 <https://esv.vic.gov.au/wp-content/uploads/2017/12/Licensed-Pipelines-Industry-Group-Natural-Gas-Transmission-Reporting.pdf>

As per ESV's audit practice:

- auditees must provide formal notification when all audit findings have been addressed
- an audit remains open until ESV is satisfied that the auditee has adequately addressed the audit findings.

An audit's progress is also categorised in one of three ways:

- 'In progress' refers to a recent audit in the process of having a rectification plan agreed or audit findings rectified in accordance with an agreed plan or within an appropriate timeframe.
- 'Incomplete' refers to an audit where there is no evidence the audit's findings have been rectified as per the agreed plan.
- 'Closed' refers to an audit response that has rectified the audit's findings.

Audits conducted for these industry groups include:

- compliance audits (focussing this reporting period on contractor and emergency management audits)
- verification audits.

7.3.2 Verification audits

Where necessary, ESV may conduct a verification audit to ensure audit findings have been satisfactorily addressed. Alternatively, as occurred during this reporting period, submitting evidence to justify the closure of an audit may be deemed sufficient if ESV is satisfied with the evidence submitted. As a result, ESV did not conduct any verification audits during the reporting period.

7.3.3 Compliance audits

Compliance audits are systematic reviews of an entity's safety management system that are designed to ensure compliance with:

- the framework's specific requirements
- legislative clauses
- Australian standards.

In this reporting period, ESV concentrated on:

- cathodic protection
- external interference.

Cathodic protection audits

The cathodic protection audits aimed to establish that pipeline licensees:

- have personnel competent to undertake and manage the cathodic protection system for protecting buried pipelines from corrosion (due to stray electrical currents)
- ensure the effectiveness of cathodic protection systems for corrosion protection
- meet the requirements of AS2832.1.

Table 7-2 lists the status of the cathodic protection audits for the reporting period.

Table 7-2 – Cathodic protection audits for 2018-19

Regulated entity	Audit date	Non-conformances	Observations	Status ¹
Mobil Refining Australia Pty Ltd	03-Dec-2018	0	1	Closed
Eso Australia Pty Ltd	17-Dec-2018	0	5	In progress
South East Australia Gas Pty Ltd	22-Feb-2019	0	3	In progress
Jemena	26-Feb-2019	0	1	Closed
Viva Energy Australia Pty Ltd	26-Feb-2019	0	6	Closed
United Terminals Pty Ltd	01-Mar-2019	0	1	In progress
Lattice Energy Ltd	08-Mar-2019	0	4	In progress
Qenos Pty Ltd	12-Mar-2019	-	-	Closed ³
Air Liquide Australia Ltd	14-Mar-2019	0	5	In progress
Exxon Mobil Aviation	19-Mar-2019	0	2	In progress
BOC Gases Australia Ltd	22-Mar-2019	0	8	In progress
BHP Billiton	26-Mar-2019	0	2	In progress
Tasmanian Gas Pipeline Pty Ltd	28-Mar-2019	0	7	In progress
Cooper Energy Pty Ltd	29-Mar-2019	0	1	In progress
APA VTS Australia (Operations) Pty Ltd	02-Apr-2019	0	11	In progress
Elgas Ltd	04-Apr-2019	0	5	In progress
LYB Australia Ltd	05-Apr-2019	0	4	In progress
Gas Pipelines Victoria Pty Ltd	09-Apr-2019	0	3	In progress
Multinet Gas	16-May-2019	1 ²	10	In progress
AusNet Gas Services Pty Ltd	21-May-2019	0	0	Closed
Australian Gas Networks (Vic) Pty Ltd	22-May-2019	0	8	In progress

Notes:

1. This is the status as at 1 July 2019.
2. Three action items were raised by the licensee to address the Non-Conformance, with the closeouts due by 30 September 2019 and 31 October 2019.
3. The audit findings were closed on the advice of the Department of Environment, Land, Water and Planning (DELWP) that the pipeline the audit related to was exempt from the Pipelines Act 2005.

ESV's cathodic protection audits included the following recurring findings:

- Cathodic protection reports not capturing detail relating to surge protection and surge protector testing.
- Insufficient evidence of a:
 - formal assessment of pipelines for compliance with AS4853
 - licensee oversight process for calibrating cathodic protection survey testing equipment.
- Cathodic protection survey reports provided by contractors are assessed by the licensee. However, discrepancies, inaccuracies and general findings are often not identified and addressed by the reviewer for further investigation, including:
 - reporting issues on cased crossings
 - test points failing to meet AS2832.1 criteria and subsequently potentially having sections of unprotected pipe
 - commentary about potential survey readings not reflecting the actual cause and effect.

Failure to address the general findings from a cathodic protection survey report may impact a cathodic protection system's effectiveness, but overall harm to pipeline integrity is often not an immediate threat.

If cathodic protection surveys are undertaken at intervals specified by the Pipeline Integrity Management Plan, the risk of a prolonged lack of protection for buried infrastructure is low.

External interference audits

ESV's external interference audits focused on pipeline patrolling as a key component of the Pipeline Integrity Management System, and in particular that:

- operational procedures are in place to mitigate the risk of unauthorised activities in the vicinity of assets
- competent personnel undertake pipeline patrols, enabling the licensee to be assured that external interference threats are identified and controlled.

Table 7-3 lists the status of the external interference audits for the reporting period.

Table 7-3 – External interference audits for 2018-19

Regulated entity	Audit date	Non-conformances	Observations	Status ¹
United Terminals Pty Ltd	01-Mar-2019	0	2	In progress
Qenos Pty Ltd	12-Mar-2019	0	1	In progress
Air Liquide Australia Ltd	14-Mar-2019	0	1	In progress
BOC Gases Australia Ltd	22-Mar-2019	3 ²	2	In progress
BHP Billiton	26-Mar-2019	0	0	Closed
Cooper Energy Pty Ltd ⁴	29-Mar-2019	0	0	Closed
Ixom Pty Ltd	31-May-2019	0	1	In progress
Esso Australia Pty Ltd	04-Jun-2019	0	3	In progress
Mobil Refining Australia Pty Ltd	07-Jun-2019	0	2	Closed
Elgas Ltd	11-Jun-2019	0	1	Closed
Lattice Energy Ltd	14-Jun-2019	1 ³	1	In progress
Viva Energy Australia Pty Ltd	18-Jun-2019	0	4	In progress
Exxon Mobil Aviation	21-Jun-2019	0	1	Closed
Incitec Pivot Limited	25-Jun-2019	0	2	Closed

Notes:

1. This is the status as at 1 July 2019.
2. Corrective actions anticipated for completion by September 2019.
3. Lattice Energy Ltd has agreed a 3 month close-out period with ESV.
4. Combined for reporting purposes: Cooper Energy Pty Ltd, Cooper Energy (CH) Pty Ltd, Cooper Energy (PB) Pty Ltd and Cooper Energy (SOLE) Pty Ltd.

ESV's external inference audits sought assurance that licensees were:

- undertaking pipeline surveillance patrols at a frequency that maximises assurance that external interference threats are identified and managed
- maintaining a competency management system that sets minimum training and competency requirements for persons conducting the patrol, and in particular that patrollers:
 - are issued with written patrolling procedures
 - are appropriately trained and competent in the procedures
 - know the extent of the pipeline easement and location of the pipeline
 - are in communication with the control centre
 - maintain a patrol log.

The audit program for this reporting period was significantly influenced by previous near miss incidents and the ongoing threat of third party interference to licensed pipeline infrastructure, and the external interference audits included the following recurring findings:

- Assurance mechanisms are insufficiently robust to inform a licensee about a patroller's competency.
- Not all the requirements of AS2885.3, Section 7.4, were included in the patrol report. This includes changes to a watercourse, steep terrain and crossings, and encroachment of vegetation limiting visibility of pipeline marker signs.
- The process for closing out issues identified during a pipeline patrol is undefined.

7.3.4 Responses to audit

Audits from the 2017-18 reporting period, which included contractor management and emergency management, have been closed.

8. Licensed Pipelines - Acceptances and approvals

8.1 Safety Management Plans and Safety Cases

Legislation requires Safety Cases and Safety Management Plans¹⁶ to be revised at least every five years to the satisfaction of ESV. In most cases, new entrants and existing companies work closely with ESV to ensure the content and quality of their submissions are appropriate for a particular facility.

Table 8.1 lists the Safety Case lodgement status as at 1 July 2019.

Table 8.2 lists Safety Management Plan revision acceptances as at 1 July 2019.

Table 8.1 – Safety Case acceptance (licensed natural gas transmission pipelines and the market operator)

Licensed natural gas transmission pipelines, market operator	Date last accepted	Next revision due	Next revision submitted
APA VTS Australia (Operations) Pty Ltd ¹	27-Aug-2009	27-Aug-2014	Yes
Australian Gas Networks (Vic) Pty Ltd	02-Aug-2010	02-Aug-2015	Yes
Jemena	04-Jul-2013	04-Jul-2018	Yes
LYB Australia Ltd	09-Jul-2013	09-Jul-2018	Yes
South East Australia Gas Pty Ltd	14-Mar-2014	14-Mar-2019	Yes
Australian Energy Market Operator Limited	08-Dec-2015	08-Dec-2020	N/A
South East Australia Gas (Mortlake) Pty Ltd	15-Sep-2017	15-Sep-2022	N/A
AusNet Gas Services Pty Ltd	29-Mar-2018	29-Mar-2023	N/A
Multinet Gas	23-Jul-2018	23-Jul-2022	N/A
APT Pipelines (SA) Pty Ltd	20-Aug-2018	20-Aug-2023	N/A
Tasmanian Gas Pipeline Pty Ltd	03-Apr-2019	03-Apr-2024	N/A
Lattice Energy Ltd	16-Apr-2019	16-Apr-2024	N/A
Gas Pipelines Victoria Pty Ltd	20-Jun-2019	20-Jun-2024	N/A

Notes:

- ESV completed the acceptance audit of APT Pipelines (SA) Pty Ltd, which incorporates safety framework documentation for the APA VTS Australia (Operations) Safety Case.

¹⁶ The requirement for an accepted Safety Management Plan for all licensed non-natural gas pipelines came into effect with the introduction of the Pipelines Regulation in 2007, and five-yearly revisions were subsequently submitted to ESV in 2012-13. All regulated entities that are yet to have their five-yearly Safety Management Plan revision accepted are currently consulting with ESV (at a minimum) to develop a satisfactory submission. Where a revision has not yet been accepted then the previous Safety Case or Safety Management Plan is the currently accepted version.

Table 8-2 – Safety Management Plan submission and revision acceptance (licensed non-natural gas pipelines)

Licensed non-natural gas pipelines	SMP revision accepted ^{1,2}
Air Liquide Australia Limited	✓
Lattice Energy Ltd ³	✓
Lattice Energy Ltd	✓
BHP Billiton ²	✓
BOC Gases Australia Ltd	✓
BP Australia Pty Ltd ²	-
Cooper Energy (CH) Pty Ltd	✓
Cooper Energy (PB) Pty Ltd	✓
Cooper Energy (Sole) Pty Ltd	✓
Elgas Ltd ²	-
Esso Australia Pty Ltd	✓
Exxon Mobil Aviation	✓
Incitec Pivot Limited	✓
Ixom Pty Ltd ²	-
Mobil Oil Australia Pty Ltd	✓
Mobil Refining Australia Pty Ltd ²	-
Qenos Pty Ltd	✓
Stolthaven ²	-
United Terminals Pty Ltd ²	-
Viva Energy Australia Pty Ltd ⁴	✓
Notes: 1. A tick denotes acceptance of the relevant compliance documentation. 2. Submitted compliance documentation might not have been accepted for a range of different reasons, from ESV not yet having reviewed the submission, through to deeming the submission as being unsatisfactory. 3. Suspension Plan for PL237 and PL240 has been accepted. 4. Acceptance of this revised Safety Management Plan specifically relates to PL-65.	

ESV reviewed 17 Safety Management Plans and Safety Cases submitted by the Licensed Pipeline Industry Group. These submissions also comprised:

- Pipeline Integrity Management Plans
- Repair Plans
- Emergency Response Plans.

8.1.1 Safety Management Plan and Safety Case acceptance

Acceptance audits are conducted to determine the validity of a Safety Management Plan and Safety Case.

Two Safety Management Plans were accepted during the reporting period:

- **Lattice Energy Pty**

Acceptance was issued for Lattice Energy Ltd PL6009, PL250, PL243 and PL244. As a condition of the acceptance, Lattice Energy Ltd was required to provide ESV with a formal Remaining Life Review for PL250, PL243 and PL244, which ESV accepted.

- **BHP Billiton**

No non-conformances or observations were identified during the acceptance audit. Acceptance was issued for BHP Billiton PL228.

Four Safety Cases were accepted during the reporting period:

- **APT Pipelines (SA) Pty Ltd**

No non-conformances or observations were identified during the acceptance audit. Acceptance was issued for APT Pipelines (SA) Pty Ltd PL255.

- **Gas Pipelines Victoria Pty Ltd**

One non-conformance was identified that involved testing the natural gas conveyed by the pipeline to ensure the gas meets the prescribed standard of quality referred to in Regulation 45(a). The findings were addressed and acceptance was issued for Gas Pipelines Victoria Pty Ltd PL179.

- **Multinet Gas**

Following provisional acceptance on 6 October 2017, Multinet Gas Distribution Partnership addressed the five conditions set, and acceptance was issued on 23 July 2018.

- **Tasmanian Gas Pipeline Pty Ltd**

No non-conformances were identified during the acceptance audit. Acceptance was issued for Tasmanian Gas Pipeline Pty Ltd PL236.

8.2 Operational works approvals

ESV's audit activities include the review and acceptance of project-specific Construction Safety Management Plans (for licensed pipeline alteration and construction), Consents to Operate (for commissioning licensed assets), and for third party proposed construction works within three metres of a licensed pipeline¹⁷. Decommissioning Works Plans and Repair Works are also lodged with ESV for review.

Table 8-3 lists Construction Safety Management Plans reviewed and accepted by ESV.

Table 8-4 lists Consent to Construct applications (within three metres of a pipeline) reviewed and accepted by ESV on behalf of the Minister.

Table 8-5 lists Consent to Operate applications reviewed and accepted by ESV on behalf of the Minister.

Table 8-3 – Construction Safety Management Plan acceptances (Construction - Alteration to License)

Pipeline licensee	Project name	Pipeline licence number
APA VTS Australia (Operations) Pty Ltd	Warragul Pipeline Expansion Project	91
	T33 Pipeline Pigging Project	108
Cooper Energy Limited	Sole Development Onshore Pipeline	006238

¹⁷ Responsibility for issuing Consent to Operate and dispensation for works within 3 meters is provided via ministerial delegation.

Table 8-4 – Consent to Construct (within three metres of a pipeline) acceptances (dispensation)

Applicant	Project name	Licence number
CIP Constructions (VIC) Pty Ltd	Construction of a fence	53 65
Defence Housing Authority	Construction of a fence and water tank	118
Landholder	Construction of a fence	53
Mobil Refining Australia Pty Ltd	Construction of a fence	118
Seymore Whyte Constructions Pty Ltd	Construction of a noise wall	66
The Hermal Group	Construction of a fence	65

Table 8-5 – Consent to Operate Plan acceptances

Pipeline licensee	Project name	Licence number
APA VTS Australia (Operations) Pty Ltd	T33 Pipeline Pigging Project	108
Australian Gas Networks (Vic) Pty Ltd	2017 Grove Regulators Replacement Program	11, 44, 61, 85, 102, 220
Esso Australia Pty Ltd	Snapper – Valve Site 1 Loch Sport SNA 600	116
Mobil Refining Australia Pty Ltd	Sectional Replacement Project	73
Viva Energy Australia Pty Ltd	Pipeline cut-out replacement project Wag cut-out repair	7 65

8.2.1 Safety Management Plans (construction and repair)

All licensed pipeline construction, alterations and planned repairs are subject to ESV's review and approval in accordance with its Safety Management Plan Guideline GPIS-12-00. This process includes:

- thorough desktop reviews of documents submitted as a part of Construction Safety Management Plans (CSMP) for Consent to Construct approval
- ESV inspectors conducting field audits during construction, testing and commissioning to validate the compliance with the work procedures adopted for the site's activities
- any observations or non-conformances identified during site audits being raised with the licensee for immediate rectification or for continuous follow up, where required.

While ESV inspectors generally find that site activities are carried out as per approved procedures, some site-specific and safety-related observations were made that included:

- inadequate excavation leading to unsecured trench sides with the potential for trench collapse
- fire extinguishers not placed in designated areas
- electrical equipment unprotected from potential hazards
- out-of-date DBYD reports.

In future, GPIS engineers will take part in construction site audits, which will allow the scope of the audits to grow to include aspects of the licensee's Safety Management Systems, ensuring that the CSMP and other relevant approval processes are followed.

9. Licensed Pipelines - Education

9.1 Ongoing initiatives

Land Development around Licensed Pipelines

ESV has made significant effort in recent years to investigate the issue of land development around pipelines, which has included the:

- formation of the Land Development Around Pipelines (LDAP) working group in 2013, which was a voluntary working group comprising industry, government, and regulatory stakeholders
- submission to the Major Hazard Facilities Advisory Committee (and in particular its acknowledgement of LDAP issues) in 2016
- consideration of pipelines within planning scheme amendments relating to new Precinct Structure Plans and rezoning examples
- recognition of pipelines within planning permits in some municipalities.

Education and awareness

During the 2018-19 financial year, the LDAP program expanded to focus on education and awareness. In late 2018, a Victoria-wide survey of local council strategic and statutory planning staff was undertaken to better understand the gaps in awareness and knowledge of licensed pipelines at the local government planning level. The survey results demonstrated that general awareness of licensed pipelines was very low. With the aim of improving the level of general awareness and knowledge among planners, a Victoria-wide road show was undertaken from February 2019 onwards.

ESV representatives and pipeline licensees together delivered 28 presentations to 60 Councils, with approximately 500 planners attending the presentations.

Policy development

ESV has been working with the Latrobe City Council, APA and Esso on a review of existing planning controls in the Latrobe Planning Scheme. Latrobe is the only council in Victoria with planning control over most pipelines in the municipality, and a Design and Development Overlay (DDO) has been in place for over 20 years and applies to an area 100 meters on either side of the pipelines. The DDO does not vary to appropriately recognise the area of potential risk, nor does it provide the tools or guidance to take the next steps to manage that risk.

A review of the current planning controls will develop proposals for planning controls that are intended to address these shortfalls.

The outcome of the review is expected to be known in 2019-20, and the licensed pipeline industry will be consulted.

Industry consultation meetings

ESV held two consultative meetings with Pipeline Licensees during the reporting period, and the agenda for the meetings delivered information and updates on the following topics:

- The revised Gas Safety (Safety Case) Regulations 2018.
- An overview of ESV's compliance audit program.
- Annual Safety and Integrity Reporting by licensees.
- Periodic Key Performance Indicator (KPI) reporting (reviewed in 2018).
- Hot work on pipelines (a case study).
- Land development around pipelines.
- Dial Before You Dig initiatives.
- The role of the Victorian Electrolysis Committee.

9.2 New initiatives

Safety Management Plan Guidelines

On July 1 2019, ESV published the Safety Management Plan Preparation and Submission for Pipelines (Guidelines)¹⁸ to assist licensees (as defined by the Pipelines Act) with the preparation and submission of a Safety Management Plan.

The guidelines outline ESV's expectations as well as helping to establish consistency when it comes to meeting the requirements of the Pipelines Act for Safety Management Plan submissions.

¹⁸ The Safety Management Plan Preparation and Submission for Pipelines (Guidelines) was published in July 2019 and is available from ESVs website <https://esv.vic.gov.au/pdfs/safety-management-plan-preparation-and-submission-for-pipelines/>

10 Licensed Pipelines - Compliance and enforcement

ESV's Compliance and Enforcement Policy and Compliance Strategy are designed to ensure that community safety and environmental outcomes are achieved as part of ESV's objectives and functions as specified by the Energy Safe Victoria Act 2005, the Electricity Safety Act 1998, the Gas Safety Act 1997, and the Pipelines Act 2005.

10.1 Incident investigation outcomes

The most common cause of pipeline failure is third party interference, which continues to be ESV's most investigated issue. Through these investigations, seven Official Warnings were issued and one third party incurred an Infringement Notice. There were no instances of legal action and prosecution of contractors.

Incident reporting

ESV received reports of 60 incidents relating to Licensed Pipeline infrastructure during the reporting period. All were reported by the licensee involved and reviewed, and 10 were investigated. Incidents deemed not to require investigation were collated as information, which adds to ESV's data collection and helps drive audit, education, and enforcement strategies.

Loss of containment

There were no 'loss of containment' incidents during the reporting period.

Gas quality

While gas quality excursions were reported by AEMO they were not 'uncharacteristic' events¹⁹ so were not investigated by ESV.

Unauthorised works within three metres of a licensed pipeline

Table 10-1 lists incidents involving unauthorised excavation within three metres of a licensed pipeline investigated during the reporting period.

¹⁹ 'Uncharacteristic' events refer to a significant gas quality excursion. Short-term gas quality excursions occur from time-to-time but pose no risk to public safety.

Table 10-1 – Unauthorised excavation within three metres of a licensed pipeline

Licensee	Licence number	Description	Date of occurrence	ESV action
Australian Gas Networks (Vic) Pty Ltd	66	Unauthorised excavation within three meters of a licensed pipeline	11-Jul-2018	Closed without enforcement action
AusNet Gas Services Pty Ltd	113	Unauthorised excavation within three meters of a licensed pipeline	11-Jul-2018	Official Warning ¹
Viva Energy Australia Pty Ltd	8 & 65	Unauthorised excavation within three meters of a licensed pipeline	19-Jul-2018	Official Warning ¹
AusNet Gas Services Pty Ltd	203	Unauthorised excavation within three meters of a licensed pipeline	30-Aug-2018	Official Warning ¹
AusNet Gas Services Pty Ltd	16	Unauthorised excavation within three meters of a licensed pipeline	11-Jan-2019	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	139	Unauthorised excavation within three meters of a licensed pipeline	23-Jan-2019	Closed without enforcement action
Australian Gas Networks (Vic) Pty Ltd	201	Unauthorised excavation within three meters of a licensed pipeline	23-Jan-2019	Infringement Notice ¹
Australian Gas Networks (Vic) Pty Ltd	49	Unauthorised excavation within three meters of a licensed pipeline	1-Feb-2019	Official Warning ¹
AusNet Gas Services Pty Ltd	18	Unauthorised excavation within three meters of a licensed pipeline	6-Feb-2019	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	49	Unauthorised excavation within three meters of a licensed pipeline	29-May-2019	Official Warning ¹
Notes:				
1. This represents action taken by ESV against a third party (not the licensee).				

All incidents investigated were a result of third party contractors excavating or boring in close proximity to a licensed pipeline, and reported directly by licensees (and investigated accordingly).

ESV's investigations identified a number of issues with contractors, most commonly for encroachment within three meters of a licensed pipeline while working on other infrastructure (for example, telecommunications pits) in close proximity and despite clearly visible warning signs showing the location of underground pipelines.

11. Licensed Pipelines - Focus and priorities for 2019-20

ESV's focus and priorities for 2019-20 will include a continued focus on external interference management systems and controls. In particular, to assess stakeholder management, liaison, and awareness programs, ESV will also:

- focus on increasing regulatory efficiency and reduce regulatory burden by:
 - reviewing corrosion protection reporting so entities are only reporting by exception, which involves reporting Potential Survey results that do not meet protection criteria (as specified by AS2832.1)
 - streamlining Construction Safety Management Plan submission requirements and allowing for a greater focus on critical projects and major works
- develop a guideline and template for building near pipelines to reduce ambiguity over what constitutes a requirement for submission and what that submission must include
- increase its focus on pipeline/facility design, procurement, construction, testing and commissioning processes and procedures that determine the quality of workmanship, and help reduce the likelihood and consequence of loss of containment incidents for gas and pipeline infrastructure. ESV will also audit these systems.

Non-licensed Gas Infrastructure



49	12	Non-licensed Gas Infrastructure - Introduction
49	12.1	The Non-licensed Gas Infrastructure Industry Group
49	12.2	Non-licensed Gas Infrastructure Industry Group changes
50	12.3	Focus and priorities during 2018-19
51	13	Non-licensed Gas Infrastructure - Monitoring, auditing and inspections
51	13.1	Compliance documentation, self-reporting and KPIs
55	13.2	ESV audits
58	14	Non-licensed Gas Infrastructure - Acceptances and approvals
58	14.1	Safety Cases
60	15	Non-licensed Gas Infrastructure - Education
60	15.1	The Gas Asset Damage Mitigation Project
61	15.2	The annual gas emergency management exercise
62	15.3	LP Gas governance
62	15.4	Ongoing initiatives
63	16	Non-licensed Gas Infrastructure - Compliance and enforcement
63	16.1	Incident investigation outcomes
65	17	Non-licensed Gas Infrastructure - Focus and priorities for 2019-20

12. Non-licensed Gas Infrastructure - Introduction

12.1 The Non-licensed Gas Infrastructure Industry Group

The Non-licensed Gas Infrastructure Industry Group, involving natural gas distribution, reticulated LP Gas and landfill gas, LP Gas retail, and LNG retail, comprises companies that operate:

- the distribution networks that reticulate natural gas supplied from the transmission system to customers via mains and service infrastructure
- LP Gas reticulation networks supplying gas to small communities
- landfill pipelines from capture points to installations
- LP Gas and LNG off-network supplies to customers at dedicated industrial, commercial and residential sites.

Table 12-1 lists the organisations in this industry group as at 1 July 2019.

Table 12-1 - Non-licensed Gas Infrastructure

Natural gas distribution
AusNet Gas Services Pty Ltd
Australian Gas Networks (Vic) Pty Ltd
Enwave Victorian Networks Pty Ltd
Multinet Gas Distribution Partnership
Reticulated LP Gas
AusNet Electricity Services Pty Ltd
Elgas Ltd
Indigo Shire Council
Mount Hotham Alpine Resort Management Board
Westernport Region Water Corporation
Reticulated Landfill
Energy Developments Limited
LP Gas retail
Elgas Ltd
Origin Energy (LPG) Limited
Supagas Pty Ltd
LNG retail
Clean Energy Fuels Australia Pty Ltd

12.2 Non-licensed Gas Infrastructure Industry Group changes

Changes to the Non-licensed Gas Infrastructure Industry Group during the reporting period involved the following:

- City of Whittlesea has been deregulated²⁰ because it has not operated its 2.2 kilometre landfill gas pipeline for nearly two years. The pipeline is in the process of being decommissioned.
- AGL Energy Sales and Marketing (Biogas) has been deregulated because its biogas pipeline no longer traverses public land following Melbourne Water's decision to privatise the land where the pipeline is installed.

²⁰ Not requiring administrative regulation under the Gas Safety Act.

12.3 Focus and priorities during 2018-19

ESV focused on LP Gas and landfill gas reticulation emergency preparedness, the audit of distribution mains and services, the Gas Asset Damage Mitigation (GADM) Project, and LP Gas Supply Industry Policy.

LP Gas and landfill gas emergency preparedness

See Section 13.2.3 for more information.

Audit of distribution mains and services

ESV continues its key focus on field inspections of mains and service renewal construction activities. See Section 13.2.4 for more information.

Gas Asset Damage Mitigation Project

ESV completed the Gas Asset Damage Mitigation (GADM) Project report in early June 2018, with the recommendations and areas for further investigation disseminated to industry shortly afterwards.

See Section 3 for information about reportable safety incidents, Section 15.1 for more information about the GADM Project, and Section 13.1.1 for information about other incident statistics, third-party damage, and damage to mains and services.

LP Gas Supply Industry Policy

After finalising its LP Gas Supply Industry Policy after LP Gas supply industry consultation, ESV has instructed that the:

- three declared LP Gas retailers provided ESV with their five-year revised Gas Safety Cases (GSC), taking into account the new policy, and Elgas Ltd and Supagas Pty Ltd have provided ESV with their GSCs²¹
- six known LP Gas retailers that are not declared gas companies (as per the Gas Safety Act 1997) provided ESV with their facility descriptions and all were compliant. From the facility descriptions received, ESV will determine the retailers that should be declared gas companies²², which are:
 - Yarra Valley Gas
 - Independent LP Gas Supplies
 - David Walsh Gas
 - Peninsula Gas and Fuel
 - Pacific Gas
 - Equaliser Gas Pty Ltd.

²¹ Origin Energy (LPG) Limited advised that it will provide its GSC at the end of September 2019.

²² ESV can only recommend to Government that the LP Gas retailers be gazetted as a gas company.

13. Non-licensed Gas Infrastructure - Monitoring, auditing and inspections

13.1 Compliance documentation, self-reporting and KPIs

Regulated entities provide ESV with safety-related information covering:

- mains renewal programming and progress
- incident statistics, including reports of damage to infrastructure, near misses, and interruptions to supply
- inspections, audits, and unauthorised third-party encroachment
- periodic compliance reporting specifically focusing on emergency preparedness.

This information helps to demonstrate compliance with legislation and standards as well as identifying potential improvements in dealing with actual incidents. See Section 10.1 for information about serious incident investigations that may lead to enforcement action.

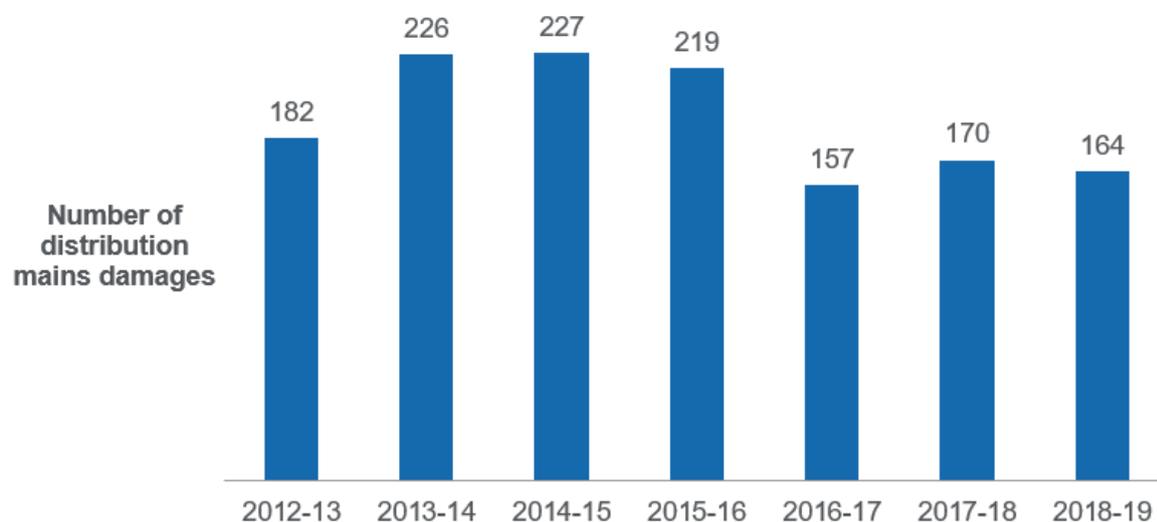
13.1.1 Incident statistics

Damage to mains

Damage to mains has plateaued over the last three years. With the continued expansion of mains infrastructure in Victoria, the number of ‘damage to mains’ incidents relative to the kilometres of infrastructure involved decreased by 3% compared with the 2017-18 reporting period.

Figure 13-1 shows the number of damage to mains (less than 1,050 kPa) incidents over the period 2012-13 to 2018-19.

Figure 13-1 - Damage to mains (less than 1,050 kPa) incidents since 2012-13²³



Through ongoing inspections and incident investigations, ESV has identified a series of ongoing issues contributing to the problem of damaged mains (and gas assets in general) including:

- inaccurate or inadequately detailed as-built drawings
- a lack of hand proving²⁴ by third parties to confirm the exact location of assets
- the traceability of underground assets, given a lack of tracer wire or training for personnel tasked with finding pipes and locating services

²³ Data from 2017-18 was incomplete due to a problem with distribution business reporting mechanisms and from 2018-19 was incomplete due to ESV not having received a report (April-June 2019) from one distribution business.

²⁴ Excavating around a pipeline without the use of machinery.

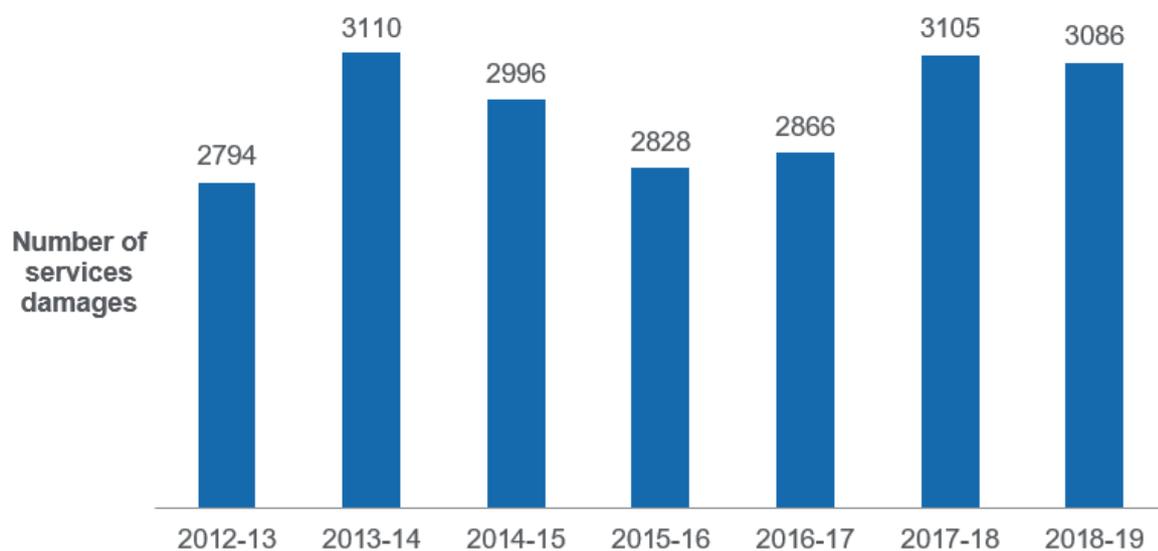
- inconsistent depth of cover
- mains deviations not being marked on plans
- gas assets not being properly identified on plans (for example, being listed as encased in an old main but actually being buried beneath it).

A high proportion of incidents occurred where a response from an inquiry to the Dial Before You Dig service was assumed to represent tacit approval to commence work in the vicinity of gas infrastructure. This is not the case and specific acknowledgement is needed from the gas asset owner.

Damage to services

ESV recorded 3,086 incidents of damage to gas services during the reporting period, which is higher than the three-year rolling average of 2,933. Figure 13-2 shows the number of 'damage to services' (less than 1,050 kPa) incidents over the period 2012-13 to 2018-19.

Figure 13-2 - Damaged services (less than 1,050 kPa) since 2012-13



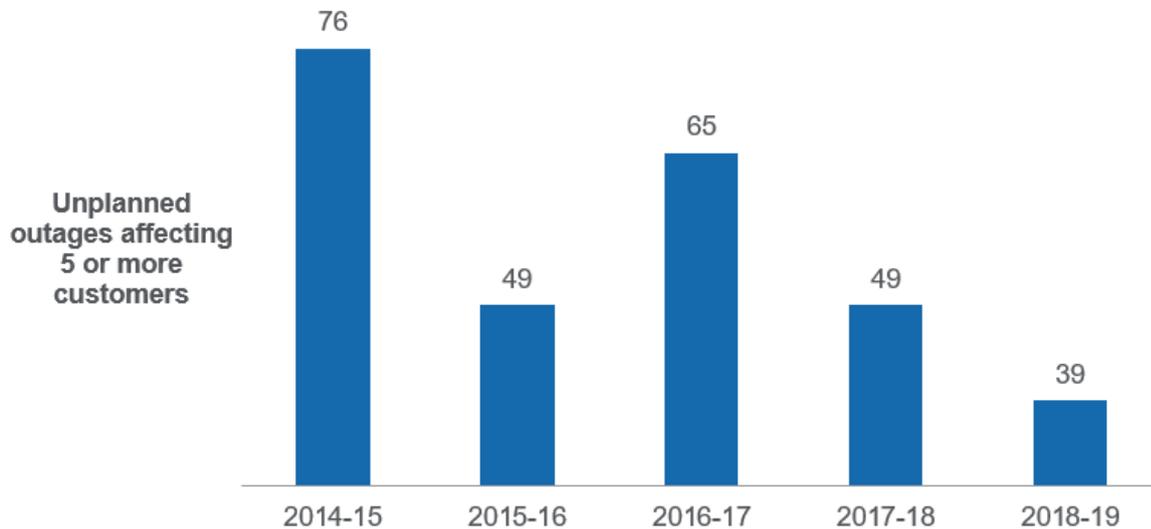
Controls that may contribute to reducing damage to services include:

- a broad education campaign on working safely around underground gas assets
- maintaining a high quality of installation workmanship to ensure asset owners maintain minimum engineering and construction standards
- ensuring that asset owners implement effective controls around asset identification.

Loss of supply

Third party damage causing a loss of supply (unplanned outages) affecting five or more customers decreased to its lowest level since 2014-15. Figure 13-3 shows the number of unplanned outages ('loss of supply' incidents) that affected five or more customers over the period 2014-15 to 2018-19.

Figure 13-3 – Loss of supply to 5 or more customers since 2014-15



13.1.2 Emergency response exercises

Non-licensed Gas Infrastructure Industry Group members are expected to undertake a minimum of two emergency response exercises in any (rolling) 12-month period²⁵.

Emergency response exercises should:

- directly involve responsible persons as identified in the accepted Emergency Response Plan
- reflect a realistic facility/pipeline incident event that tests response and recovery protocols

Emergency response exercise reporting should include 'lessons learned' recommendations and any actions that will need to be taken to ensure ongoing improvement.

Table 13-1 lists the regulated entities that did not conduct two emergency response exercises during the reporting period as per Safety Case requirements.

Table 13-1 - Regulated entities failing to conduct required emergency response exercises

Industry group segment	Regulated entity
Natural Gas Distribution	None
Reticulated LP Gas	None
Reticulated Landfill Gas	None
LP Gas Retail	None
LNG Retail	Clean Energy Fuels Australia Pty Ltd

²⁵ ESV does not count actual incidents as emergency response exercises.

13.1.3 Mains renewal program statistics

The initiative to replace older, low-pressure pipes with high-pressure pipe systems is represented by an ongoing mains renewal program (MRP) being undertaken by the three metropolitan gas distribution businesses (DB).

The MRP forms an important part of the overall asset maintenance plan, which is aimed at improving natural gas service reliability and safety, given cast iron, unprotected steel, and PVC pipelines deteriorate over time, making them brittle and prone to cracks that can cause leaks and potentially serious hazards. Replacing these pipeline types entirely (rather than performing ongoing repairs) is the best way to deal with this potential risk.

The Australian Economic Regulator (AER) has allowed funds to enable the distribution businesses to carry out asset replacement the DBs deem critical, and ESV is monitoring the program to ensure progress is:

- meeting previously notified schedules and is to the quality requirements of the Australian standards
- in accordance with the asset owner's procedures (as outlined in each DB's Safety Case).

This involves monthly progress updates from the DBs and planned and unplanned inspections of construction and renewal work by ESV.

In terms of progress to date:

- The 2013–2017 replacement program replaced 1,598 kilometres of gas mains.
- The 2018–2022 program is largely on schedule and is expected to be completed by 2033.

A number of factors have contributed to delays in commencing works in inner Melbourne and the CBD, including contract selection, liaison with local council and other permit issuing bodies, and constraints in scheduling works in areas where construction activity is already quite high (for example, the Metro Tunnel and water mains replacement).

ESV will continue to closely monitor the mains renewal work, which will include carrying out overnight inspections.

13.1.4 Periodic compliance reporting

Agreements are in place with various regulated entities for the periodic submission of KPI reports, which are expected to be submitted to ESV within 20 business days from the end of each quarter.

Table 13-2 lists the regulated entities that were late to submit KPI quarterly reports on more than one occasion during the reporting period.

Table 13-2 – Periodic KPI quarterly report late submissions

Industry group segment	Regulated entity
Natural Gas Distribution	None
Reticulated LP Gas	None
Reticulated Landfill Gas	None
LP Gas Retail	None
LNG Retail	Clean Energy Fuels Australia Pty Ltd

13.2 ESV audits

13.2.1 Compliance documentation

Regulated entities are required to have a range of up-to-date compliance documents²⁶ that detail the entity's safety management framework. These documents provide the basis for ESV's ongoing compliance audits.

Compliance requirements specific to this industry group include:

- Safety Cases
- as-built drawings and route plans
- formal delegations²⁷
- Asset Management Plans
- Emergency Response Plans
- registration/procedures for Dial Before You Dig²⁸.

13.2.2 Audit process

ESV's strategic audit planning process identifies its audit priorities and underpins the annual audit plan and any associated resource allocation. ESV audits are designed to test compliance with Safety Cases, and audit topics and entities are selected in line with the risk-based strategic audit framework.

Audit findings are categorised in one of two ways:

- 'Observations' represent an isolated lapse or failure to comply with a specified requirement with the potential to lead to non-conformance and must be addressed within two months.
- 'Non-conformances' represent a failure to comply with specified requirements and must be addressed immediately or as otherwise agreed with ESV.

As per ESV's audit practise:

- auditees must provide formal notification when all audit findings have been addressed
- an audit remains open until ESV is satisfied that the auditee has adequately addressed the audit findings (with supporting evidence).

An audit's progress is also categorised in one of three ways:

- 'In progress' refers to a recent audit in the process of having a rectification plan agreed or audit findings rectified.
- 'Incomplete' refers to an old audit for which no evidence has been provided that the audit's findings have been rectified.
- 'Closed' refers to an audit response that has rectified the audit's findings.

Audits conducted for this industry group include:

- compliance audits (focussing on emergency preparedness compliance audits)
- field inspections.

26 Legislation and standards require the revision of Safety Cases (including Asset Management Plans and Emergency Response Plans) at least every five years to the satisfaction of ESV.

27 The person responsible for the operation of a facility as declared under the Gas Safety Act or as licensed under the Gas Industry Act.

28 Landfill biogas, natural gas distribution, CNG and LP GAS reticulation networks are only required to register as a member with DBYG and follow its third-party response requirements where the assets are not fully contained within a private property.

13.2.3 Compliance audits

Compliance audits are systematic reviews of an entity's safety management system and are designed to ensure compliance with specific legislative clauses and Australian standards.

In this reporting period, ESV carried out five emergency preparedness audits.

Emergency preparedness compliance audits

ESV's emergency preparedness compliance audits focused on the:

- assessment of emergency response protocols, procedures, and emergency response exercises
- training and competency of emergency management teams with respect to their Emergency Response Plans.

Table 13-3 lists the emergency preparedness compliance audits conducted during the reporting period.

Table 13-3 - Emergency preparedness compliance audits

Regulated entity	Audit Date	Non-conformances	Observations	Status ¹
Westernport Region Water Corporation	18-Oct-2018	0	9	Closed
Mount Hotham Alpine Resort Management Board	27-Nov-2018	0	18	Closed
AusNet Gas Services Pty Ltd	22-Feb-2019	0	0	In progress
Indigo Shire Council	04-Jun-2019	2 ²	8	In progress
Notes:				
1. This is the status as at 1 July 2019.				
2. One non-conformance closed out and the other is due for completion in November 2019				

The emergency preparedness compliance audits revealed a number of common observations including:

- capturing all reasonably foreseeable emergencies
- specifying the roles and responsibilities for Emergency Management Team members and others with responsibilities in an incident or emergency
- defining the emergency levels
- addressing the recovery procedures for purging, refixing and relighting following an emergency
- detailing the minimum level of training and competency for responsible persons nominated for the Emergency Management Team.

13.2.4 Field inspections

ESV inspected 418 natural gas distribution locations for compliance. These locations included infrastructure for mains, services and meter installations. The inspections focused on:

- mains renewal works within Metropolitan Melbourne involving the three Victorian natural gas distribution businesses
- the construction of new gas mains and services in country Victoria and new estate developments. These works are often conducted by sub-contractors who followed processes and procedures set out by the asset owners.

Areas where audit findings identified issues included:

- construction to engineering standards
- fusion practices
- live gas works
- general mains and services construction, installation, and commissioning.

Figure 13-4 shows a breakdown of the areas where issues were identified.

Table 13-4 lists the field audit finding categories, their definitions, and the incidence of each.

Figure 13-4 – Natural gas distribution business field audits

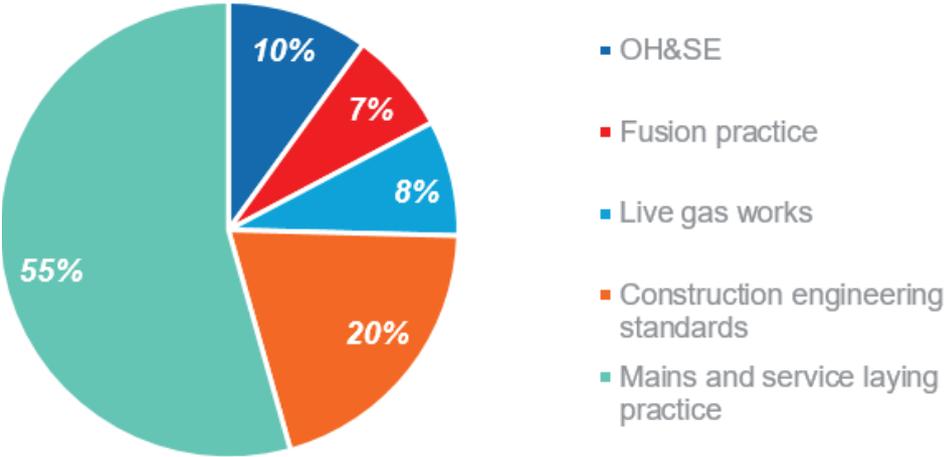


Table 13-4 – Field audit finding categories and incidences found

Finding category	Definition	Incidences
OH&SE	Includes issues like onsite documentation, fire extinguishers, personal protective equipment (PPE), traffic management, pedestrian access, electrical testing, equipment calibration, training and competency.	56
Fusion practice	Includes issues like stop off, purging, gas detector use, manometer use, squash off, insertion bushes, cut out of mains, and cross bonding.	41
Live gas works	Includes issues like butt fusion practices, saddle fusion practices, use of line up clamps, socket fusion practises, electro fusion practices, and test welds.	46
Construction engineering standards	Includes issues like depth of cover, tracer wire usage, point loading, marker tape, asset alignment, pipe damage, pipe storage, gas meter placement, pressure testing, and service abandonment.	114
Mains and service laying	Includes issues like unprotected risers, missing bollards, valve orientation, excavation, and housekeeping.	306

13.2.5 Responses to audit

Work site attendance

ESV inspectors attending gas distribution mains and services construction work-sites are identifying a decreased level of workmanship during unannounced audits. Pre-arranged audits typically present better in terms of site house-keeping, improved processes for following main laying procedures, and greater on-site oversight.

While ESV is gauging an accurate reflection of general work practises by contractors through planned inspections, it will continue to attend unannounced from time-to-time.

14. Non-licensed Gas Infrastructure - Acceptances and approvals

14.1 Safety Cases

Legislation requires Safety Cases to be revised at least every five years to the satisfaction of ESV. In most cases, new entrants and existing companies work closely with ESV to ensure the content and quality of their submissions is appropriate for a particular facility.

During the reporting period, ESV received five Safety Case submissions and accepted two Safety Cases.

Table 14-1 lists the Safety Case lodgement status as at 1 July 2019.

Table 14-1 – Safety Case lodgement status (Non-licensed Gas Infrastructure)

Industry group/regulated entity	Date last accepted	Next revision due	Next revision submitted
Natural gas distribution			
Australian Gas Networks (Vic) Pty Ltd	02-Aug-2010	02-Aug-2015	Yes
Enwave Victorian Networks Pty Ltd	08-Apr-2016	08-Apr-2021	N/A
AusNet Gas Services Pty Ltd	29-Mar-2018	29-Mar-2023	N/A
Multinet Gas Distribution Partnership	23-Jul-2018	23-Jul-2023	N/A
Reticulated LP Gas			
Elgas Ltd	14-Oct-2013	14-Oct-2018	Yes
Mount Hotham Alpine Resort Management Board	19-Feb-2014	19-Feb-2019	No
Westernport Region Water Corporation	25-Feb-2014	25-Feb-2019	Yes
Indigo Shire Council	23-Jan-2015	23-Jan-2020	N/A
AusNet Gas Services Pty Ltd	29-Mar-2018	29-Mar-2023	N/A
Reticulated Landfill Gas			
Energy Developments Limited	21-Dec-2018	21-Dec-2023	N/A
LP Gas Retail			
Origin Energy (LPG) Limited	18-Dec-2012	18-Dec-2017	No
Supagas Pty Ltd	20-Jun-2013	20-Jun-2018	Yes ²
Elgas Ltd	14-Oct-2013	14-Oct-2018	Yes ²
LNG Retail			
Clean Energy Distribution	31-May-2013	31-May-2018	No
Notes:			
1. Submitted documents may not have been accepted for a range of different reasons that include ESV not yet having reviewed the submission or deeming the submission unsatisfactory. See Section 14.1.1 for more information.			
2. Safety Case acceptance has been delayed in lieu of ESV's LP Gas regulatory policy outlining jurisdictional boundaries between the Dangerous Goods Act (administered by WorkSafe Victoria) and the clarification of the regulatory safety framework for the LP Gas industry under the Gas Safety Act (administered by ESV).			

14.1.1 Safety Case acceptance

Acceptance audits are conducted to determine the validity of a Safety Case prior to acceptance, and two Safety Cases were accepted during the reporting period:

- **Multinet Gas Distribution Partnership**

Following provisional acceptance on 6 October 2017, Multinet Gas Distribution Partnership addressed the five conditions set. Acceptance was issued on 23 July 2018.

- **Energy Developments Limited**

Two non-conformances were identified relating to:

- articulation of maintenance tasks and schedules
- failure to undertake two emergency response exercises per annum.

The findings were addressed and acceptance was issued for Energy Developments Limited's landfill gas operations.

15. Non-licensed Gas Infrastructure - Education

15.1 The Gas Asset Damage Mitigation Project

Third party hits on gas mains and services create unsafe situations for the community, cause disruptions to supply, and create significant economic costs for network owners that flow onto rate payers.

With the annual number of third party hits on gas mains and services (combined) fluctuating between 2,900 and 3,600, which is unacceptably high, and with no clear trend downwards, ESV initiated the Gas Asset Damage Mitigation (GADM) Project to examine possible causes and investigate what can be done to reduce these numbers.

Project approach

The GADM project, which commenced in March 2017, is taking a holistic approach to the issue of gas asset hits. To gain a thorough understanding of the issue and identify potential improvements and solutions, the project consulted as widely as possible with the following stakeholders:

- metropolitan gas distribution businesses
- third parties that have frequently hit gas assets
- water authorities
- electricity distribution businesses
- industry associations
- contractors working on gas assets
- the VicWater Underground Gas Safety Working Party.

The project initially reported on the findings from ESV's field audit program (from September 2017 to March 2018), which involved ESV inspectors conducting a total of 63 field audits spread across the gas distribution business (DB) mains replacement and new subdivision activities. The audits focused on the work practices and work quality of the gas DB service providers and subcontractors, and used the Australian standards and each gas DB's engineering and construction standards as a benchmark.

Project focus

Stemming from ESV's consultation sessions and audits, the GADM Project report focused on three streams:

- **Controls** - the project reviewed the controls implemented by the gas DBs to prevent third party gas asset hits, focussing on the five controls deemed the most critical to determine their effectiveness and fitness for purpose.
- **Education** - the project investigated potential target audiences, the contents of messaging, and various different media platforms to establish whether a campaign designed to educate people on how to work safely around gas assets can reduce gas asset hits.
- **Enforcement** – the project reviewed the potential for an enhanced enforcement strategy that will ensure consistency, transparency and accountability in ESV's approach to gas asset hits as the independent technical regulator responsible for gas and pipeline safety in Victoria.

Outcomes

The GADM Project report made 13 recommendations to better understand the role that controls, education, and enforcement play in reducing third party damage. In July 2018, ESV introduced the report and findings via an industry presentation to all three Victorian metropolitan natural gas DBs. The DBs provided their initial feedback as an industry group in August 2018, followed by a presentation to ESV in October 2018. In response, ESV requested individual plans of action from each DB, which were received by April 2019.

The report and its findings led to multiple initiatives by industry, which included:

- establishing the accuracy of asset plans
- field tests to establish more robust alternatives to copper tracer wire (tests are ongoing)
- implementing performance metrics around pipe locating services (now implemented with findings suggesting pipe locating services have a high success rate)
- up-skilling asset locating personnel to obtain DBYD locator certification (now completed with all relevant personnel obtaining certification)
- creation of a joint Victorian DB forum (now created with several meetings already having been held to establish a reasonable level of consistency in terms of engineering standards and work practices)
- establishing digital forms to record and build an asset damage database (now implemented and ESV is awaiting a meaningful sample size analysis).

In the responses from the DBs, significant differences were found between industry²⁹ and ESV data sets. ESV is now investigating to identify the reasons for the discrepancy.

See also Section 13.1.1 for more information about the incident statistics for the reporting period and third-party damage to mains and services.

15.2 The annual gas emergency management exercise

The 2019 Gas Emergency Management Consultative Forum's (GEMCF) annual gas emergency exercise, Exercise Venn, was held on 13 May 2019 and was attended by all of the natural gas DBs.

Exercise Venn was a facilitated, discussion-based exercise with an escalating scenario that required government, AEMO, and gas industry participants to discuss targeted actions as the scenario developed. While 'education' was a core theme of the exercise's development, the exercise itself was designed to promote:

- awareness and understanding of the roles and responsibilities in terms of the whole-of-industry response to a gas emergency
- a broad understanding of the roles and responsibilities of the gas supply chain and its interaction with the State's emergency management framework in response to a gas emergency.

Objectives

Exercise Venn's objectives were to:

- step through the stages of an event, from incident management through to consequence management, including the specifics of implementing an effective control structure
- demonstrate an understanding of the application of State and industry plans, protocols, and procedures to prepare, respond, and recover from a gas emergency
- identify and assess the adequacy of government/industry relationships and the consequential flow of communications to enable an effective response
- workshop a complex range of consequences facing government and industry to identify improvements for collaboration
- discuss the implementation of an effective emergency communications strategy
- explore the coordination of recovery in accordance with supporting plans and procedures, and discuss the technical limitations in undertaking a recovery effort.

²⁹ The data set used by industry did not cover an extensive time period.

Findings

The scenario, which included consequences like environmental disaster, evacuation, public health issues, civil unrest, and gas curtailment for approximately 200,000 gas homes and businesses, was designed to:

- promote a wide ranging discussion and enable the evaluation of supporting plans and processes in response to a complex sequence of events (not to model the impacts and engineer a solution)
- explore the participant's ability to respond to a non-typical gas emergency that resulted in widespread adverse community consequences.

The exercise's findings concluded that:

- participants have a solid understanding of individual responsibility and the technical or operational actions required in response to an incident
- roles and responses in the process for coordinating an emergency were better understood at the micro level (by individuals) than at the macro level (by the broader group combining to deliver a complete solution to the emergency).

15.3 LP Gas governance

ESV made a series of requests involving the three declared LP Gas retailers and the six known non-declared LP Gas retailers after finalisation of ESV's LP Gas Supply Industry Policy after LP Gas supply industry consultation. The requests will help ESV determine which of the retailers should be declared gas companies. See Section 12.3, LP Gas Supply Industry Policy, for more information.

ESV believes that there may be other independent LP Gas retailers operating in Victoria that may qualify as declared gas companies.

15.4 Ongoing initiatives

Jurisdictional and regulatory policy

Following the finalisation of ESV's LP Gas Supply Industry Policy, which outlines jurisdictional boundaries between the Dangerous Goods Act (administered by WorkSafe Victoria) and the Gas Safety Act (Administered by ESV), ESV has determined the:

- technical safety criteria for recommending to government that non-declared LP Gas Retailers should be declared gas companies, which can be applied on a case-by-case basis
- required content for a declared LP Gas retailer's Gas Safety Case.

Industry consultation meetings

Once the LP Gas supply industry becomes fully conversant with ESV's LP Gas Supply Industry Policy³⁰, ESV will recommence a series of consultative forums with declared reticulated and retail LP Gas companies.

³⁰ This policy sets out the jurisdictional boundaries between the Dangerous Goods Act (administered by WorkSafe Victoria) and the Gas Safety Act (administered by ESV) with the aim of ensuring that there are no gaps or overlaps between the two jurisdictions.

16. Non-licensed Gas Infrastructure - Compliance and enforcement

ESV's Compliance and Enforcement Policy and its Compliance Strategy are designed to ensure that community safety and environmental outcomes are achieved as part of ESV's objectives and functions as specified by the Energy Safe Victoria Act 2005, the Electricity Safety Act 1998, the Gas Safety Act 1997, and the Pipelines Act 2005.

Investigation outcomes are used to inform ESV's Enforcement Strategy for Gas Asset Damage³¹:

- enabling inspectors to have a clear set of principles to be able to translate the 'behaviour' of infringing persons and link that to specific actions
- providing a decision making framework when dealing with entities responsible for damage to the gas distribution network.

ESV's Compliance and Enforcement Policy and Compliance Strategy will commence in 2019-20.

16.1 Incident investigation outcomes

Of the 27 incidents investigated by ESV during the reporting period, 18 involved third party interference. This is the most common cause of pipeline failure, which continues to be ESV's most investigated issue. ESV's investigations and their outcomes (which can lead to prosecutions, Infringement Notices, Improvement Notices, or Official Warnings), are making contractors increasingly aware that interference with gas assets has consequences for them and for public safety.

Table 16-1 lists non-licensed gas infrastructure events investigated during the reporting period³².

Of the 18 third party asset damage incidents investigated (which often resulted in a loss of supply to customers and emergency service attendance):

- 16 involved damage to a natural gas mains
- 2 involved damage to natural gas services.

Contractors excavating in the vicinity of buried natural gas distribution infrastructure are required to ensure all reasonable precautionary measures are undertaken to avoid contact with pipelines. This includes completing a DBYD request and/or requesting the asset owner to locate the main or service. Both of these services are free and while they continue to be offered, the asset owner is required to provide an accurate and timely response to contractors.

31 A subordinate document to ESV's Compliance and Enforcement Policy and its Compliance Strategy.

32 This only represents investigations where enforcement action was taken. Eight other investigations were conducted that did not result in enforcement action. See Table 10-1 for information about Official Warnings for unauthorised excavation within three metres of a licensed pipeline.

Table 16-1 – Non-licensed gas infrastructure events

Regulated entity	Description	Date of occurrence	ESV action ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	31-May-2018	Infringement Notice ²
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	27-Jul-2018	In progress
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	10-Sep-2018	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	13-Sep-2018	Official Warning ¹
AusNet Gas Services Pty Ltd	Third party asset damage	12-Oct-2018	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	22-Oct-2018	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	25-Oct-2018	Official Warning ¹
Multinet Gas Distribution Partnership	Third party asset damage	28-Nov-2018	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	6-Dec-2018	Infringement Notice ¹ (x2)
Multinet Gas Distribution Partnership	Third party asset damage	12-Dec-2018	Official Warning ¹
Multinet Gas Distribution Partnership	Third party asset damage	10-Jan-2019	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	12-Feb-2019	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	22-Feb-2019	In progress
AusNet Gas Services Pty Ltd	Third party asset damage	4-Mar-2019	Infringement Notice ¹
AusNet Gas Services Pty Ltd	Third party asset damage	12-Mar-2019	Official Warning ¹
Multinet Gas Distribution Partnership	Third party asset damage	23-Mar-2019	Official Warning ¹
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	21-May-2019	In progress
Australian Gas Networks (Vic) Pty Ltd	Third party asset damage	29-May-2019	In progress

Notes:

1. This represents action taken by ESV against a third party (not the regulated entity).
2. Event occurred prior to the reporting period but action occurred during the reporting period.

17. Non-licensed Gas Infrastructure - Focus and priorities for 2019-20

ESV's focus and priorities for 2019-20 will include:

- increasing ESV's natural gas mains replacement works field audits (similar to the audits conducted by ESV inspectors in recent years)
- efficiently delivering the Enforcement Strategy for Gas Asset Damage that was endorsed by the Compliance and Enforcement Panel
- reviewing the KPI reporting requirements for the reticulated LP Gas, LP Gas retail, landfill gas, and LNG retail, which follows on from the Licensed Pipeline Industry Group and Natural Gas Retailer KPI reviews.

Natural Gas Retail



69	18	Natural Gas Retail - Introduction
69	18.1	The Natural Gas Retail Industry Group
70	18.2	Natural Gas Retail Industry Group changes
70	18.3	Focus and priorities during 2018-19
71	19	Natural Gas Retail - Monitoring, auditing and inspections
71	19.1	Compliance documentation, self-reporting and KPIs
74	20	Natural Gas Retail - Acceptances and approvals
74	20.1	Safety Cases
76	21	Natural Gas Retail - Education
76	21.1	The annual gas emergency management exercise
76	21.2	Ongoing initiatives
77	21.3	New initiatives
78	22	Natural Gas Retail - Compliance and enforcement
79	23	Natural Gas Retail - Focus and priorities for 2019-20

18. Natural Gas Retail - Introduction

18.1 The Natural Gas Retail Industry Group

Table 18-1 lists the businesses involved in retailing natural gas in Victoria as at 1 July 2019.

Table 18-1 - Natural Gas Retail

Natural Gas Retail
Agora Retail Pty Ltd
AGL Sales Pty Limited
Alinta Energy Retail Sales Pty Ltd
BHP Bass Strait Asset Retail
Click Energy Pty Ltd
CovaU Pty Ltd
EnergyAustralia Pty Ltd
Esso Australia Resources Pty Ltd
GloBird Energy Pty Ltd
Ipower 2 Pty Limited and Ipower Pty Limited ¹
Lumo Energy Australia Pty Ltd ²
M2 Energy Pty Ltd ³
Momentum Energy Pty Ltd
Origin Energy Retail Limited
Powershop Australia Pty Ltd
Red Energy Pty Limited
SparQ Gas Pty Ltd ⁴
TasGas Retail Pty Ltd
Weston Energy Pty Ltd
1st Energy Pty Ltd
Notes:
1. Trading as Simply Energy.
2. Combining Infratil Energy Australia and Lumo Energy Australia Pty Ltd for reporting purposes.
3. Trading as Dodo Power and Gas Pty Ltd.
4. Trading as Sumo Gas Pty Ltd.

18.2 Natural Gas Retail Industry Group changes

Changes to the Natural Gas Retail Industry Group during the reporting period include the following new entrants:

- BHP Bass Strait Asset Retail
- 1st Energy Pty Ltd.

ERM Power Retail Pty Limited has stopped retailing natural gas.

18.3 Focus and priorities during 2018-19

ESV focused on the five-yearly Safety Case review submissions and new entrant Safety Case submissions during the reporting period:

- Seven submissions were received and accepted
- ESV determined that annual self-compliance reporting was redundant and re-introduced annual compliance audits instead³³.

Natural Gas Retailers

With 18 Natural Gas Retailers operating in Victoria in December 2018, it has been worthwhile tailoring the annual consultative meetings with the retailers alone. While the first annual ESV – Natural Gas Retailers Consultative Meeting was held on 11 December 2018, this year's meeting was held on 18 September 2019.

ESV obtained monthly VBA Compliance Certificate information from the three Natural Gas DBs and the four main Natural Gas Retailers that take on new gas connections, and used this information to check that the relevant retailers were correctly validating the Compliance Certificate information they received for 'new to industry' standard gas installations before they organised meter fixes for these installations.

All Natural Gas Retailers provided their completed quarterly KPI reports at the end of each quarter.

33 Natural Gas Retailers that did not receive acceptance audits during the year received emergency preparedness compliance audits.

19. Natural Gas Retail - Monitoring, auditing and inspections

ESV's strategic audit planning process identifies its audit priorities and underpins the annual audit plan and any associated resource allocation. The 2018-19 compliance audits for this industry group focused on annual Safety Case self-compliance and accepted Safety Case (and associated procedures) auditing.

19.1 Compliance documentation, self-reporting and KPIs

Regulated entities are required to have a range of up-to-date compliance documents³⁴ that detail the entity's safety management framework. These documents provide the benchmark for ESV's ongoing compliance audits.

Compliance document types specific to this industry group include:

- Safety Cases
- Formal Delegations³⁵
- Emergency Response Plans.

19.1.1 Self-reporting and KPIs

In 2013, ESV introduced Safety Case compliance self-reporting for Natural Gas Retailers. Despite natural gas retail facilities being generally lower risk than other facilities regulated by ESV (as per Activity Risk Scoring), ESV is still choosing to audit them for compliance and attain the appropriate assurances. ESV has also re-introduced compliance auditing, which replaces the requirement for annual compliance self-reporting.

19.1.2 Incident statistics

Emergency response exercises

Natural Gas Retail Industry Group members are required to conduct at least two emergency response exercises in any (rolling) 12-month period. Emergency response exercises are mainly designed to cover the communication and curtailment protocols of industry participants during an emergency.

Following the identification of certain deficiencies during three recent Gas Emergency Management Consultative Forum (GEMCF) emergency exercises, and to ensure the validity of a gas company's emergency response plan, ESV is pursuing the following assurances from Natural Gas Retailers:

- The execution of at least two emergency response exercises per year (Exercises may comprise two desktops and two role plays, or one desktop and one role play. Participation in the annual GEMCF gas industry exercise counts as one role play exercise.)
- The existence of a satisfactory emergency response plan, which all relevant personnel have been trained on. The Emergency Response Plan or the Gas Safety Case (or both) is to stipulate that the gas company will undertake two emergency response exercises per year
- The ability to demonstrate operational competencies through emergency response exercises and involvement in exercises conducted by the GEMCF
- An understanding that the fundamental focus during a gas emergency is to ensure that the safety of people and the protection of property take absolute priority over commercial interests

³⁴ Legislation requires the revision of Safety Cases at least every five years to the satisfaction of ESV.

³⁵ The person responsible for the operation of a facility as declared under the Gas Safety Act or as licensed under the Gas Industry Act.

- An understanding about the implementation of voluntary curtailment when AEMO is not issuing directions. (This issue came to light during an exercise to test a Level 3 Voluntary Curtailment scenario involving Natural Gas Retailers and distribution businesses.)
- An understanding about gas load management and recovery, which has been a cause for uncertainty among Natural Gas Retailers and distribution businesses.

Following the ESV – Natural Gas Retailers Consultative Meeting conducted on 11 December 2018, most Natural Gas Retailers conducted their two emergency response exercises or planned their upcoming emergency response exercises in accordance with ESV’s requirements. Where emergency response exercises were not completed, refresher training was conducted by the entity for its Emergency Management Team.

19.1.3 Periodic compliance reporting

Agreements are in place with natural gas retail entities for the submission of quarterly Key Performance Indicator (KPI) reports, which are expected to be submitted to ESV within 20 business days of the end of the previous quarter.

No natural gas retail entities were late to submit KPI quarterly reports on more than one occasion during the reporting period.

19.1.4 Compliance audit

ESV’s emergency preparedness compliance audits covered the:

- assessment of emergency response protocols, procedures, and emergency response exercises
- training and competency of emergency management teams with respect to their Emergency Response Plan.

Table 19-1 lists the emergency preparedness compliance audits conducted during the reporting period.

Table 19-1 - Emergency preparedness compliance audits

Regulated entity	Audit date	Non-conformances	Observations	Status ¹
Click Energy Pty Ltd	09-Oct-2018	0	9	Closed
Powershop Australia Pty Ltd	12-Oct-2018	0	7	Closed
Ipower 2 Pty Limited and Ipower Pty Limited	12-Oct-2018	0	11	Closed
Lumo Energy Australia Pty Ltd	16-Oct-2018	0	10	Closed
Momentum Energy Pty Ltd	16-Oct-2018	0	10	Closed
Alinta Energy Retail Sales Pty Ltd	23-Oct-2018	0	7	Closed
CovaU Pty Ltd	24-Oct-2018	0	8	Closed
SparQ Gas Pty Ltd	30-Oct-2018	0	9	Closed
Esso Australia Resources Pty Ltd	08-Nov-2018	0	3	Closed
AGL Sales Pty Limited	04-Mar-2019	3 ²	6	Closed
Origin Energy Retail Limited	12-Mar-2019	0	8	Closed
EnergyAustralia Pty Ltd	13-Mar-2019	0	3	Closed
GloBird Energy Pty Ltd	21-May-2019	0	3	Closed

Notes:

1. This is the status as at 1 July 2019.
2. The three non-conformances were addressed by revising the Emergency Response Plan to ensure clear articulation of processes and also clarifying roles and responsibilities of Emergency Management Team Members. Close-out of the non-conformances to be completed within 60 days of notification.

The audits revealed a number of common observations including:

- Emergency Management Plan contact e-mails and phone numbers often being obsolete or not readily available
- an inability to validate the competency of call centre representatives to handle emergency calls
- a failure to undertake two emergency response exercises annually
- emergency response plans that are not:
 - appropriately document controlled (for example, no senior management signoff or version control)
 - detailing the roles and responsibilities of the emergency management team
 - specifying the minimum training requirements and frequency of refresher training.

19.1.5 Electronic audit

No electronic audits were conducted during the reporting period³⁶.

³⁶ Electronic audits are self-assessment questionnaires and treated the same way as a compliance audit.

20. Natural Gas Retail - Acceptances and approvals

20.1 Safety Cases

Legislation requires the revision of Safety Cases at least every five years to the satisfaction of ESV. In most cases, new entrants and existing companies work closely with ESV to ensure that the content and quality of their submissions are appropriate for a particular facility. Seven submissions were received and accepted during the reporting period. None of the existing Natural Gas Retailers are due for submission.

Table 20-1 lists the Safety Case lodgement status as at 1 July 2019.

Table 20-1 – Safety Case revision and acceptance (Natural Gas Retail)

Regulated entity	Date last accepted	Next revision due	Next revision submitted
Red Energy Pty Limited	18-Sep-2014	18-Sep-2019	N/A
Click Energy Pty Ltd	16-Jan-2015	16-Jan-2020	N/A
AGL Sales Pty Ltd	24-Mar-2015	24-Mar-2020	N/A
CovaU Pty Ltd	18-Jun-2015	18-Jun-2020	N/A
Esso Australia Pty Ltd	01-Mar-2016	01-Mar-2021	N/A
Lumo Energy Australia Pty Ltd	14-Jun-2016	14-Jun-2021	N/A
Powershop Australia Pty Ltd	13-Feb-2017	13-Feb-2022	N/A
SparQ Gas Pty Ltd	21-Jul-2017	21-Jul-2022	N/A
Ipower 2 Pty Limited and Ipower Pty Limited	15-Sep-2017	15-Sep-2022	N/A
Weston Energy Pty Ltd	20-Nov-2017	20-Nov-2022	N/A
GloBird Energy Pty Ltd	06-Dec-2017	06-Dec-2022	N/A
Alinta Energy Retail Sales Pty Ltd	19-Dec-2017	19-Dec-2022	N/A
Tas Gas Retail Pty Ltd	28-May-2018	28-May-2023	N/A
Origin Energy Retail Ltd (Mildura) & Origin Energy (Vic) Pty Ltd	17-Jul-2018	17-Jul-2023	N/A
Agora Retail Pty Ltd	07-Aug-2018	07-Aug-2023	N/A
Energy Australia Pty Ltd	12-Nov-2018	12-Nov-2022	N/A
M2 Energy Pty Ltd	08-Feb-2019	08-Feb-2024	N/A
BHP Bass Strait Asset Retail	21-Mar-2019	21-Mar-2024	N/A
Momentum Energy Pty Ltd	06-May-2019	06-May-2024	N/A
1st Energy Pty Ltd	14-May-2019	14-May-2024	N/A

20.1.1 Safety Case acceptance

Acceptance audits are conducted to determine the validity of a Safety Case, and a number of common findings from the audits involved:

- incomplete training for personnel with responsibilities under the Safety Case and Emergency Management Plan
- not requiring the completion of emergency response exercises twice a year
- not detailing the personnel responsible for tasks associated with gas safety.

Seven Safety Cases were accepted during the reporting period:

- **Agora Retail Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for Agora Retail Pty Ltd on 7 August 2018.

- **BHP Bass Strait Asset Retail**

No non-conformances were identified at the acceptance audit. Acceptance was issued for BHP Bass Strait Asset Retail on 21 March 2019.

- **EnergyAustralia Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for Energy Australia Pty Ltd on 12 November 2018.

- **1st Energy Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for 1st Energy Pty Ltd on 14 May 2019.

- **M2 Energy Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for M2 Energy Pty Ltd on 8 February 2019.

- **Momentum Energy Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for Momentum Energy Pty Ltd on 6 May 2019.

- **Origin Energy Retail Ltd (Mildura) & Origin Energy (Vic) Pty Ltd**

No non-conformances were identified at the acceptance audit. Acceptance was issued for Origin Energy Retail Ltd (Mildura) & Origin Energy (Vic) Pty Ltd on 17 July 2018.

21. Natural Gas Retail - Education

21.1 The annual gas emergency management exercise

The 2019 Gas Emergency Management Consultative Forum's (GEMCF) annual gas emergency exercise, Exercise Venn, was held on 13 May 2019 and was attended by 12 natural gas retail companies.

Exercise Venn was a facilitated discussion-based exercise with an escalating scenario that required government, AEMO, and gas industry participants to discuss targeted actions as the scenario developed. While 'education' was a core theme of the exercise's development, the exercise itself was designed to promote:

- awareness and understanding of the roles and responsibilities in terms of the whole-of-industry response to a gas emergency
- a broad understanding of the roles and responsibilities of the gas supply chain and its interaction with the State's emergency management framework in response to a gas emergency.

See Section 15.2 for more information about Exercise Venn's findings.

21.2 Ongoing initiatives

Industry consultation meetings

In December 2018, ESV held consultative forums with natural gas retail companies during the reporting period. ESV determined that, with so many retailers, it was important to now meet with retailers alone (and not combined with other industry groups). The agenda for the first ESV – Natural Gas Retailers Consultative Meeting, held in December 2018, covered the following topics:

- the revised Gas Safety (Safety Case) Regulations 2018
- an overview of the Emergency Preparedness Compliance Audit outcomes
- ESV's oversight activity of industry group and redundancy of self-reporting
- the new quarterly ESV KPI reporting template.

New meter installations

In the previous reporting period, ESV reported on the challenges for Natural Gas Retailers when understanding the different obligations for 'new to industry' gas installation compliance. This includes:

- differentiating between the type of building and/or the complexity of the installation, which determines whether an ESV Application for Acceptance or a VBA Compliance Certificate is required
- the process involved for certifying each type of a standard or complex gas installation.

As a result, ESV attended the offices of the four largest Natural Gas Retailers that take on new connection customers to validate their methods for assessing Compliance Certificates for standard gas installations, and one Natural Gas Retailer was found to have organized a meter fix for a standard gas installation installed by a plumber who was unqualified for gasfitting work.

ESV will continue to monitor the validation process by auditing Compliance Certificate information each month provided by the:

- natural gas distribution businesses
- four largest Natural Gas Retailers that take on new connection customers and are now providing information to ESV on Compliance Certificate information obtained for new standard gas installations.

As well as the monthly auditing, ESV met with relevant Natural Gas Retailers and the Victorian

Building Authority (VBA) to discuss the VBA's portal for validating Compliance Certificate information.

Further workshops between ESV, Natural Gas Retailers, and the VBA are proposed as the VBA continues to evolve its system for automation of licensed gasfitter and compliance certificate information.

21.3 New initiatives

KPI review

ESV has completed its review of the KPI reporting template that Natural Gas Retailers are required to periodically provide. Following a process of consultation with the industry group, the new reporting template came into effect on 1 January 2019. The revised KPI clarifies ESV's requirements for (and the reporting of) Emergency calls and gas quality.

Gas Information Sheet No. 33

Natural Gas Retailers that take on new gas connections need to differentiate between the type of building and the complexity of the installation, which determines whether an ESV Application for Acceptance or a VBA Compliance Certificate is required. ESV has an information sheet, Gas Information Sheet No. 33, Gas Installation Notification, which details relevant information from the Gas Safety Act 1997 and the Gas Safety (Gas Installation) Regulations 2018, and defines the type of building or installation that is involved.

Previously, each Natural Gas Retailer that takes on, or proposes to take on, a new gas connection was required to request training from an ESV Gas Safety Officer on ESV's Gas Information Sheet No. 33. With 10 Natural Gas Retailers now taking on, or proposing to take on, new gas connections, this training became harder to organise and stretched the resources of ESV's Gas Operations group.

As a result, ESV has decided to hold one training session each year, with the first held in May 2019 with representatives from AGL Sales, Origin, Energy Australia, Powershop, Momentum Energy, Alinta Energy, and Sumo Gas. ESV will continue to organise these annual, one-off training sessions for all relevant Natural Gas Retailers.

It is important that relevant Natural Gas Retailers correctly determine whether a new gas installation is standard or complex because ESV needs to assess all new complex gas installations that are generally a higher safety risk than standard gas installations.

Compliance auditing

Despite natural gas retail facilities being generally lower risk than other facilities regulated by ESV, it is fundamental that even low risk elements are audited from time-to-time. As such, ESV resumed Natural Gas Retailer compliance audits. While five-year revised Gas Safety Case acceptance audits will take place as a priority, all Natural Gas Retailers will be audited yearly, with this year's audit objective being 'emergency preparedness'. Next year's focus will be on 'competency and training'.

The compliance audit objectives were chosen because of their importance to Natural Gas Retailers. This emphasis is further reinforced by the emergency response exercises currently run by ESV and AEMO with the retailers.

22. Natural Gas Retail - Compliance and enforcement

ESV's Compliance and Enforcement Policy and Compliance Strategy are designed to ensure community safety and environmental outcomes are achieved as part of ESV's objectives and functions as specified by the Energy Safe Victoria Act 2005, the Electricity Safety Act 1998, the Gas Safety Act 1997, and the Pipelines Act 2005.

To date, ESV's activities have been in cooperation with regulated entities that in most cases responded promptly and effectively, and no enforcement action has been required.

23. Natural Gas Retail - Focus and priorities for 2019-20

ESV's focus and priorities for 2019-20 will include the following:

- A focus on the training and competence of personnel responsible for a gas company's Gas Safety Case
- Reviewing the quarterly KPI reports, gas company emergency preparedness, and gas company obligations under the new Gas Safety (Safety Case) Regulations 2018
- Maintaining up-to-date information on gas company businesses and organisational changes.
- Validation of Compliance Certificates for new gas meter installations.

Appendix A



83 24 Appendix A

83 24.1 Terms and abbreviations

24. Appendix A

24.1 Terms and abbreviations

Terms and Abbreviations	Meaning
AEMO	Australian Energy Market Operator Limited (ACN 072 010 327)
AER	Australian Energy Regulator
ALARP	As low as reasonably practicable
AS	Australian Standard/s
Cathodic protection	A technique used to control the corrosion of a metal surface by making it the cathode of an electrochemical cell
Cathodic protection system	An electrical means of mitigating corrosion on buried and submerged metallic structures
CNG	Compressed natural gas
Conditions of Works	A specific requirement issued by a pipeline licensee to an external party prior to its proposed works in the vicinity of a pipeline to ensure the safe and reasonable protection of the licensee's asset. Conditions of Works detail the conditions under which work may be undertaken and are provided by licensees to third parties in response to a Dial Before You Dig enquiry
CP	Cathodic protection
DCVG	Direct Current Voltage Gradient
DELWP	Department of Environment, Land, Water and Planning
EIRC	Energy Industry Response Committee
EMV	Emergency Management Victoria
ESC	Essential Services Commission
GEMCF	Gas Emergency Management Consultative Forum
GEMG	Gas Emergency Management Group
LNG	Liquefied natural gas
Location classes (T1 and T2)	Urban location classes, T1 involves suburban areas and T2 involves multi-storey areas or large commercial centres
LP Gas	Liquefied petroleum gas
NDT	Non-destructive testing

www.esv.vic.gov.au