



appea

the voice of australia's
oil and gas industry

Submission

March 2018

Senate Standing Committees on Education and Employment:

Inquiry into Work health and safety of workers in the offshore petroleum industry



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Contents

Key Points	3
Introduction	4
An objective-based regulatory regime provides the flexibility for the offshore industry to drive continuous improvement in risk management.....	5
Step Changes in Safety for the Oil and Gas Industry	5
Results of the Industry's Step Changes in Safety.....	8
Industry Sector comparison.....	12
Process Safety	14
Industry-Driven Responses to Improving Safety	16
SaferTogether	18
The Role of Health and Safety Representatives	19
Offshore health and safety regulatory framework	20
Supported Principles of Regulation	20
Application of the Safety Case Framework in Commonwealth Waters	21
An independent expert regulatory authority	24
Independent Reviews of NOPSEMA	24
NOPSEMA's Activities	25
Regulatory improvement – opportunity for conferral	26
Attachment 1 – Background Information.....	28
History and Evolution of the Regulatory Regime for Offshore Petroleum Safety.....	28
United Kingdom Government Inquiries (Robens and Cullen)	28
History of Petroleum 'Safety Case' Regulation in Australia	30
Further Evolution of the HSE Regulatory Environment.....	32

Key Points

- In the past, the global oil and gas industry has undertaken significant 'step changes' towards improving its management of safety to reduce the rate of incidents. This has resulted in improved engineering; improved health and safety management systems; and attention on the interaction of people with their workplace.
- The ability for industry to assess its performance, identify potential options and pursue innovative solutions is facilitated by regulatory frameworks which focus on the safety outcome rather than prescribed minimum standards.
- The regime operated in Australia by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is aligned with this approach and has been independently validated on a number of occasions as being mature and robust.
- Stability, simplicity and consistency of the regulatory framework is fundamental to providing industry with the platform it needs to continue to pursue continuous improvement in the management of safety risks associated with its activities.
- Performance data for the industry shows a long-term increase in hours worked and decline in fatal accidents within the oil and gas industry from 1985 to 2016, illustrating the effectiveness of the industry's efforts to improve safety. There remains room for improvement to achieve leading international performance, although it is noted that recent increases in incidents are aligned with an unprecedented level of construction activity in Australia.



Introduction

The Australian Petroleum Production and Exploration Association (APPEA) is the peak national body representing Australia's oil and gas exploration and production industry. We have 60 full members operating in both onshore and offshore environments and 130 associate members providing services to the industry. Our member companies account for the vast majority of petroleum exploration and around 98 per cent of total oil and gas production in Australia.

The industry is a major and growing contributor to the Australian economy. A wave of almost \$200 billion was recently invested in Australia, including across seven major liquefied natural gas (LNG) export projects.¹

By 2020, the sector's economic contribution to the national economy is set to more than double to \$65 billion. Associated taxation paid is projected to rise from \$8.8 billion (an estimated \$4.9 billion in corporate taxes and \$3.8 billion in production taxes) to reach almost \$13 billion.

While this level of investment provides significant opportunities, it also presents challenges and the industry has recently placed a high level of focus on managing safety in line with a substantial increase in work hours across projects.

However, many of Australia's major oil and gas projects are moving from construction into operations. This transition necessitates an evolution in the industry's safety focus, beyond construction of infrastructure and towards the risks associated with production of hydrocarbons. Fortunately, the industry has been managing for these risks globally for decades.

The industry's pursuit of continuous improvement in safety is facilitated by objective-based regulatory frameworks, which focus on achieving the best outcome rather than the prescription of minimum standards.

This flexibility has provided the framework for industry to self-identify potential safety risks and the relevant mitigation strategy, resulting in a safety journey over decades which has seen a long time decline in injuries.

This submission focusses on the industry's constant drive to improve safety performance and the independent validation of NOPSEMA as an expert regulator. Much of the history of the evolution of the regulatory regime and the global adoption of 'Safety Cases' is provided in Attachment 1.

¹ Bureau of Resources and Energy Economics (2013), *Resources and Energy Major Projects*, <https://industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/rempe/rempe-2013-10.pdf>

An objective-based regulatory regime provides the flexibility for the offshore industry to drive continuous improvement in risk management

The Australian oil and gas industry is committed to demonstrating high and uniform standards to protect the safety, integrity and health of people, the environment and our communities.

Step Changes in Safety for the Oil and Gas Industry

High hazard industries have a history of pursuing innovative solutions to improve the safety of workers. Examples include the development of the pressure relief valve in the 1800s to counter the risk of boiler explosions and the development of dynamite to replace nitroglycerine, which was inherently unstable.

HISTORIC INNOVATION IN SAFETY MANAGEMENT FOR HIGH HAZARD INDUSTRIES

Increased development of oil and gas to support growth in the automobile and aviation industries at the turn of the 20th Century, led to improved engineering components such as pressure relief valves, pipes and valves. In parallel, improved knowledge and practical experience were codified into industry standards. Eventually, the impact of safety advancements became less pronounced as standards matured.

The development of management systems after the 1950's generated significant productivity improvements in businesses of all types. This led to a reduction in safety risk by avoiding the exposure of workers to hazards and reducing the duration of exposure.

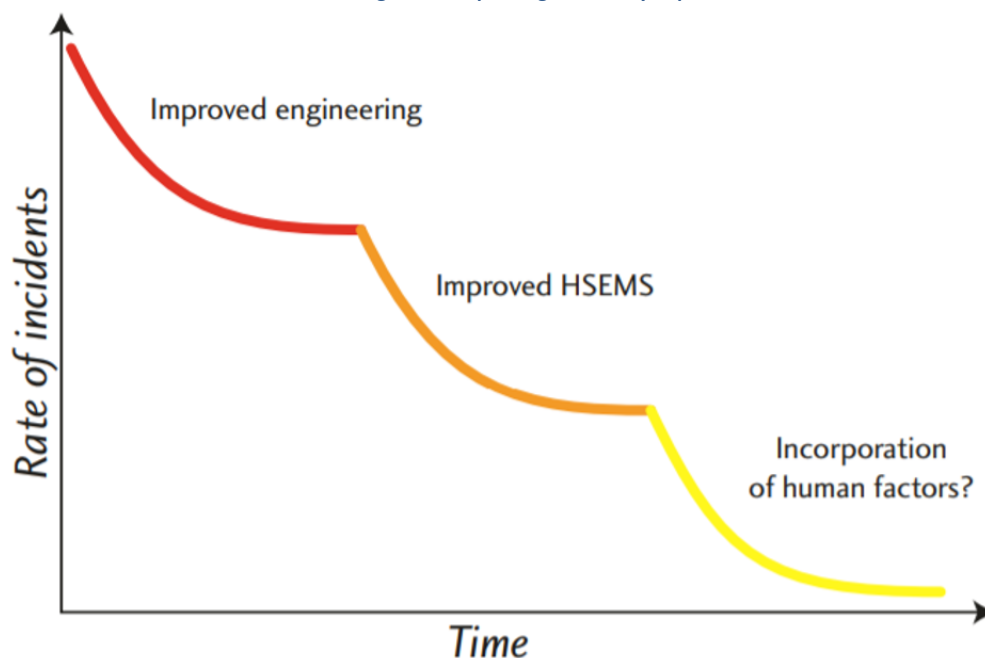
This was particularly necessary with the evolution of automated continuous processing in the 1960's. This type of processing relied heavily on systems to manage increasingly complex interactions of operating conditions and the rapid growth in scale of processing plants. To manage these complex operations, new processes such as Hazard and Operability (HAZOP) studies emerged and continued to remain relevant to safety performance in the 21st Century.

The UK Flixborough disaster in 1974 also drove significant improvement in safety management systems. Outcomes focussed on the concept of management of change as a mandatory component of modern safety management systems, along with improvements to physical design such as blast-proofing of on-site control rooms.

EVOLUTIONS IN OIL AND GAS SAFETY MANAGEMENT

The significant step changes in safety for oil and gas, particularly since the 1990's, are illustrated in the diagram below.²

Figure 1 - Step Changes in Safety Improvements³



For the Offshore Oil and Gas Industry, the 1998 Piper Alpha Disaster provided the stimulus for the most significant step change in safety. The recognition and integration of the importance of human factors in the post-Piper Alpha period has been the most recent industry-driven improvement in workplace safety.⁴

Piper Alpha not only acted as the pre-cursor to widespread adoption of the safety case, but also drove a cultural shift in the industry to relentlessly pursue safety outcomes.

Safety interactions between the full variety of industry participants became commonplace at every work site and the workforce began to own and articulate safety improvements. These were rapidly implemented and further improvements identified.

Development of standardised approaches to safety, such as BP's 'Golden Rules of Safety'⁵, informed the emergence of similar approaches across industry. These various approaches were coalesced by IOGP into a single reference named Life Saving Rules.⁶

³ IOGP Report 368³, 'Human Factors – a means of improving HSE performance', <http://www.iogp.org/bookstore/product/human-factors-a-means-of-improving-hse-performance/>.

⁴ Ibid.

⁵ BP, 'Golden Rules of Safety', https://www.bp.com/content/dam/bp-country/en_us/PDF/Pipelines/Contractors/Golden-rules-booklet.pdf

⁶ IOGP, 'Life-Saving Rules', <http://www.iogp.org/oil-and-gas-safety/life-savingrules/>



According to IOGP, at least one company found that encouraging shared responsibility and greater involvement of employees delivered a 71% reduction in Total Recordable Incidents and a 100% reduction in Lost Time Incidents over a 3 year period.⁷ This also resulted in enhanced reliability and increased production.⁸

A decrease in the safety improvements stimulated by Piper Alpha led to the North Sea industry establishing Step Change For Safety in 1997. This initiative served to re-invigorate ongoing improvements in safety performance.

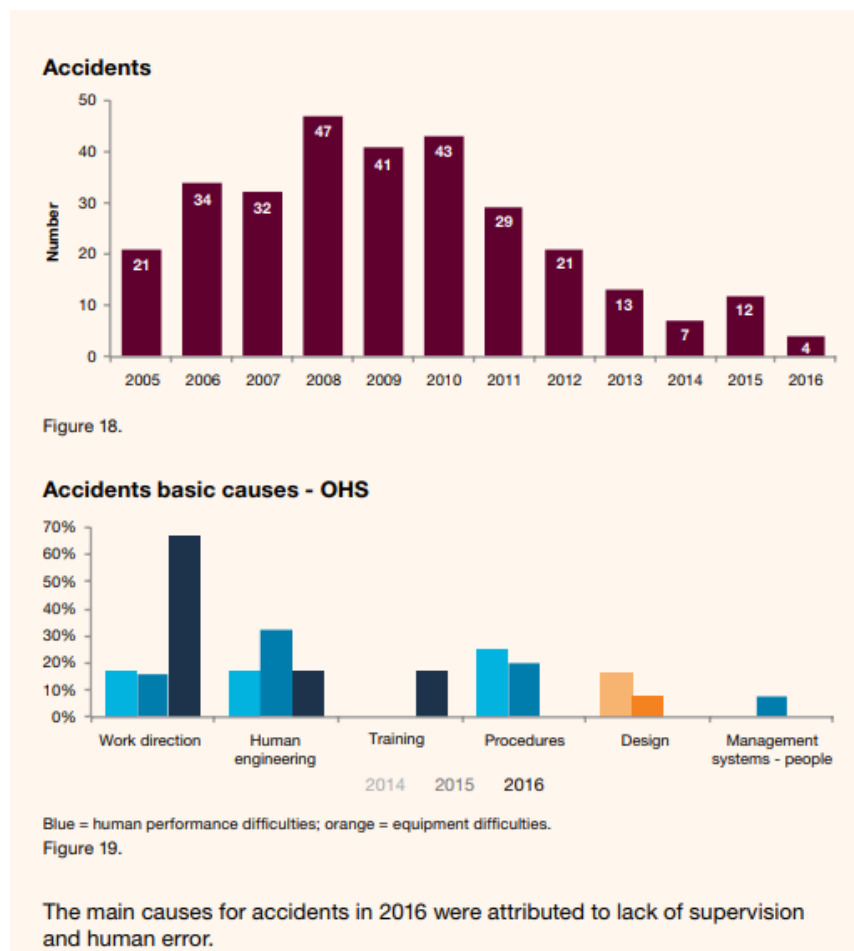
In Australia the industry remains focussed, in part, on promoting the material benefits of a highly engaged workforce and recognition that everyone participates in safety as a core component of their work.

It is noted that NOPSEMA's annual performance data for 2016 indicates a very low level of accidents and distinguishes the basic causes of these incidents. As illustrated in Figure 2, for the year 2016 these were primarily work direction, human engineering and training. Ultimately, companies need to create working environments where individuals can take on leadership responsibilities from any position.

⁷ IOGP Report 368⁷, '*Human Factors – a means of improving HSE performance*', <http://www.iogp.org/bookstore/product/human-factors-a-means-of-improving-hse-performance/>

⁸ Ibid.

Figure 2 - OHS Incidents 2016⁹



The roles of Health and Safety Representatives (HSRs) and HSE Committees, as defined in the Act, are highly valued in this regard. Oil and gas companies provide multiple avenues for all staff to raise health and safety concerns, directly through company processes, via HSRs or even anonymously via independent services or the regulator. Feedback from HSRs is discussed later in this submission.

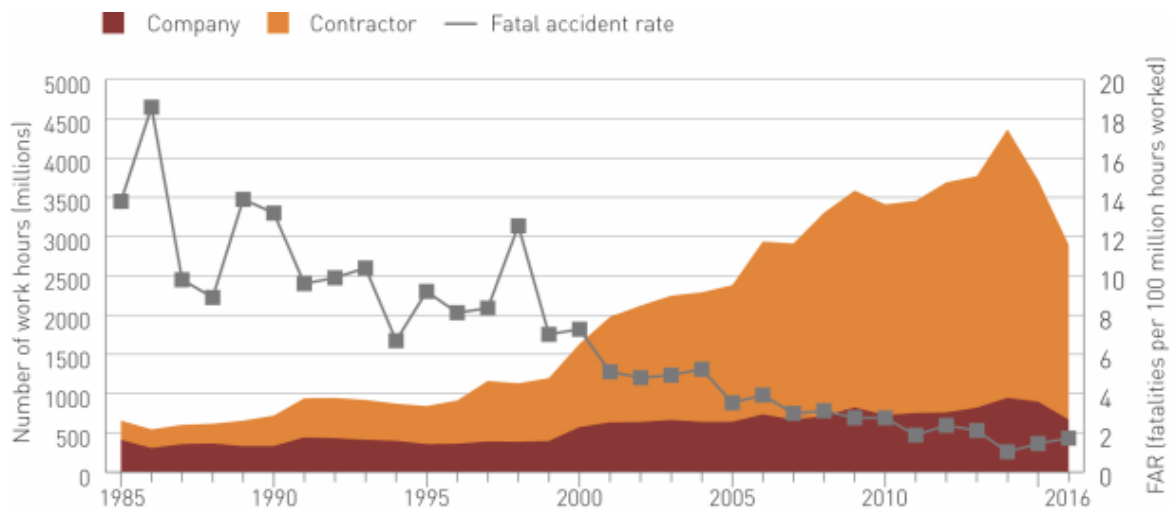
A critical part of industry's ability to respond to declines in safety performance is the maintenance of industry-wide data on safety performance, discussed further in the next section.

Results of the Industry's Step Changes in Safety

Data from IOGP, below, shows a long term increase in hours worked and decline in fatal accidents within the oil and gas industry from 1985 to 2016, illustrating the effectiveness of the industry's efforts to improve safety.

⁹ NOPSEMA, 'Annual performance report 2016', <https://www.nopsema.gov.au/assets/Publications/A552578.pdf>.

Figure 3 - IOGP Reported Work Hours and Fatal Accident Rate (1985-2016)¹⁰



Australian safety performance has notably improved compared to the IOGP benchmark data since 2007, though there remains more room for improvement to achieve leading international performance.

This improvement has been a direct consequence of industry's efforts since 2007, when APPEA provided the initial forum for industry CEO's to address the performance gap between international and Australian activities. A number of important industry initiatives were commenced to support a collective Australian effort to deliver the step change in safety outcomes.

The two charts below show the Australian offshore oil and gas industry safety performance for these two measures since 2007, as per the NOPSEMA annual performance report information 2016, compared with the IOGP benchmarks for the same metrics. The data reflects only offshore metrics to facilitate direct comparison between occupational safety performance under the OPGGSA regime in Commonwealth waters and international equivalent data.

Two key measures facilitate occupational safety performance comparisons with any and all workplace activity:

- The Total Recordable Incident Frequency Rate is a measure of all incidents that result in an intervention that is more serious than first aid per million workhours.
- The Lost Time Injury Frequency Rate is a measure of all incidents that result in any time away from work per million workhours.

¹⁰ International Association of Oil and Gas Producers, Safety Performance Indicators 2016, <http://www.iogp.org/bookstore/product/safety-performance-indicators-2016-data/>.

Figure 4 - TRIFR Global Vs Australia¹¹

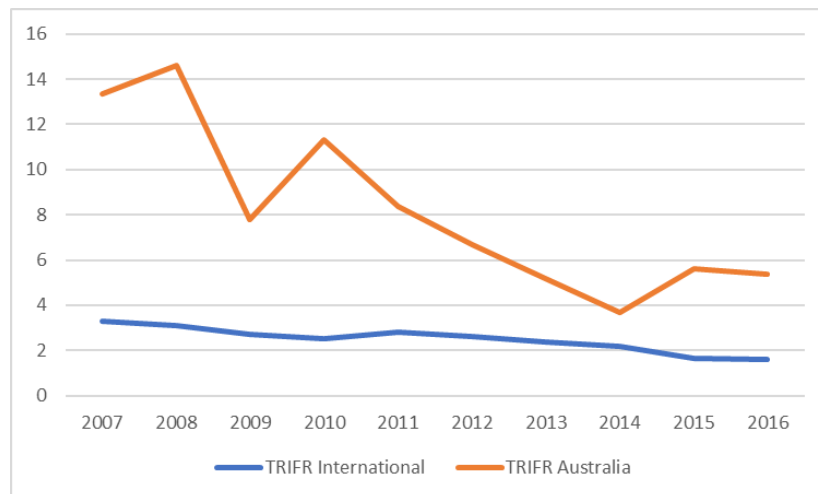
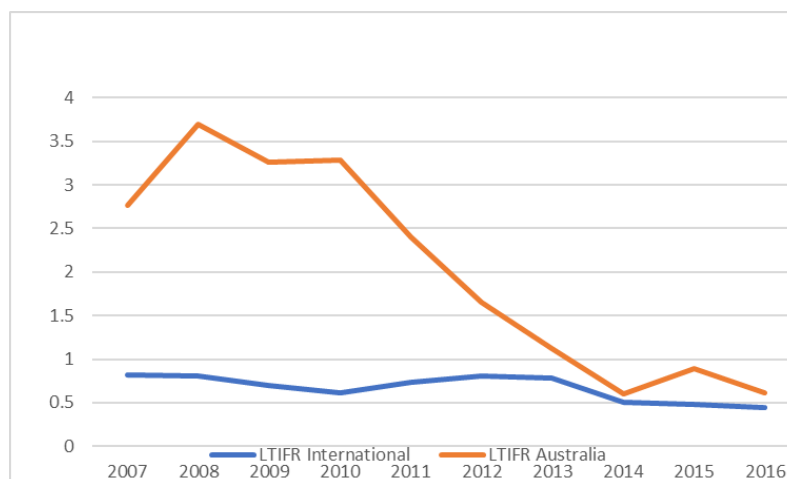


Figure 5 - LTI Global Vs Australia



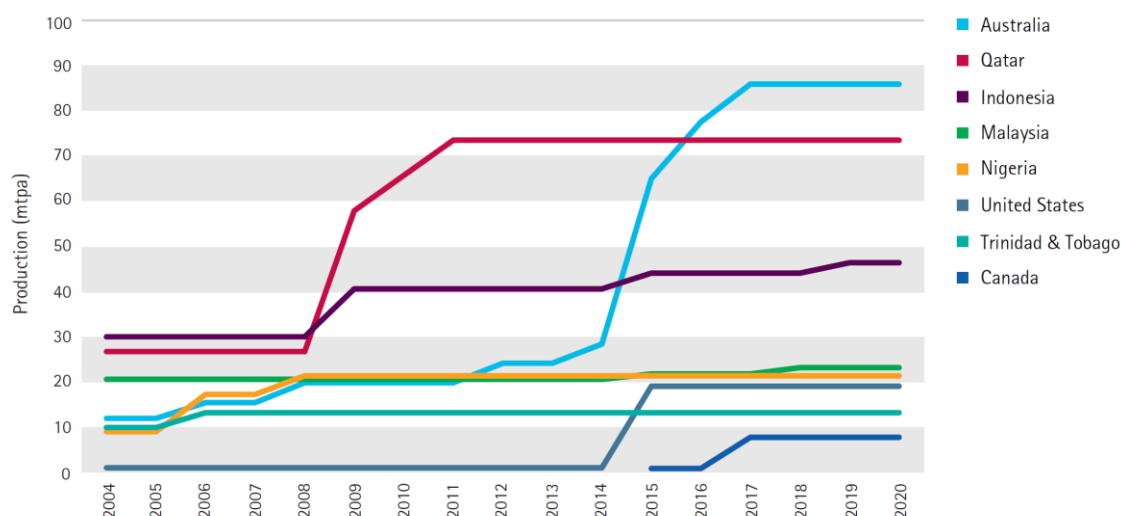
As illustrated in these charts, both Australian and international safety performance over this period demonstrates continuously improving trends in both metrics.

It is worth noting that the marginal increases in TRIFR and LTI rates, evidenced in Figures 3 and 4, correlate with an 'unprecedented' increase in the industry's construction activity in Australia.¹² This is illustrated in Figure 5.

¹¹ Data combined from International Association of Oil and Gas Producers, Safety Performance Indicators 2016, <http://www.iogp.org/bookstore/product/safety-performance-indicators-2016-data/> and NOPSEMA Annual Performance, <https://www.nopsema.gov.au/assets/Data-and-statistics/Charts-Annual-performance.pdf>.

¹² According to Accenture, "the Australian oil and gas sector is undergoing a radical transition through a >\$250 billion capital investment period into the world's largest, most modern and technologically advanced LNG industry... the speed, scale and scope of this transition is unprecedented anywhere in the world." Source: Accenture, 'Ready or Not: Creating a World-leading oil and gas industry in Australia', https://www.accenture.com/au-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_14/Accenture-Australia-LNG-Report.pdf.

Figure 6 - Australia's LNG nameplate capacity compared to other countries (mtpa)¹³



Since the reduction in oil price in 2014, the rate of occupational safety performance improvement has slowed significantly both in Australia and overseas. This is a function of the shift to a reduced total activity set, with higher hazard activities, such as production and committed project construction more prevalent in the data than in previous years, where substantial workhours in lower risk activities such as early exploration and project development were present.

This lower rate of activities is evidenced in data collected by NOPSEMA, showing reduced applications for new activities in the NOPSEMA Annual Performance Report 2016 (Appendix 5 Data Tables). This data shows that, in 2016, there were 30% fewer applications for new activities in 2016 versus 2012.

Despite the reduced activity set, there remains significant project activity to complete as demonstrated by the Accenture chart above. As a result, the Australian oil and gas industry's exposure to higher hazard activities is particularly acute as its unprecedented construction phase has not yet completed.

This is potentially a significant influence on the increase in total recordable injury frequency rate over the IOGP benchmark. However, it should be noted that the severity of injuries has improved, as evidenced by the LTIFR in 2016 and the fact that the offshore industry achieved zero major incidents for the first time under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* in the same year.

It is noted that this has been achieved despite Australia being several phases behind the hydrocarbon maturity levels of traditional international hubs, such as the North Sea, which is in decline. The shift in Australia, from a capital investment phase to a world scale LNG producing

¹³ Accenture Page 10.



operations and maintenance environment requires change of focus and this will require time to take effect.

Industry Sector comparison

Data from NOPSEMA¹⁴ indicates that the Australian offshore oil and gas industry had an LTIFR of 0.62 in 2016, which is better than any other sector in the Safework Australia dataset, including low hazard activities such as Financial and Insurance Services.

Safework Australia collects data on workplace occupational safety performance across all states and territories. In its report, “Key Work Health and Safety Statistics Australia 2017” Safework Australia provide a comparison of industry sector performance:

¹⁴ NOPSEMA, ‘Annual performance report 2016’, <https://www.nopsema.gov.au/assets/Publications/A552578.pdf>.



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Industry of employer	Number of claims	Frequency rate (serious claims per million hours worked)	Incidence rate (serious claims per 1,000 employees)
Agriculture, forestry and fishing	3,510	8.9	17.5
Manufacturing	12,740	8.4	15.5
Construction	12,670	8.0	16.0
Transport, postal and warehousing	8,200	7.7	14.4
Health care and social assistance	16,175	7.4	10.7
Arts and recreation services	2,110	7.1	9.7
Wholesale trade	4,415	6.6	12.3
Public administration and safety	7,670	6.1	10.2
Accommodation and food services	6,185	5.9	7.4
Administrative and support services	4,245	5.8	9.2
Retail trade	9,185	5.3	7.3
Education and training	6,335	4.3	6.5
Other services	2,790	4.3	7.4
Electricity, gas, water and waste services	1,140	4.2	8.2
Mining	2,080	4.1	9.2
Rental, hiring and real estate services	970	2.6	4.8
Information media and telecommunications	515	1.4	2.5
Professional, scientific and technical services	1,645	1.0	1.8
Financial and insurance services	620	0.8	1.4
Total	104,770	5.6	9.3

Safe Work Australia / Key Work Health and Safety Statistics, Australia 2017

This table provides national workers' compensation statistics from data provided by the relevant authorities in each state and territory. The 'serious claims' information reflects lost time incidents of more than one week duration. The serious claims frequency rate can therefore be directly compared with the LTI Frequency Rate information for offshore oil and gas activity, noting the more conservative nature of the latter metric (which includes all incidents of any duration).

In APPEA's view this demonstrates how effective the OPGGSA has been in supporting duty holders to deliver superior performance under the regime regulated by NOSPEMA.

Despite this comparatively good performance, the oil and gas industry remains determined to continue to deliver improved safety performance, noting the following opportunities:

- Occupational health and safety performance continues to lag international benchmarks

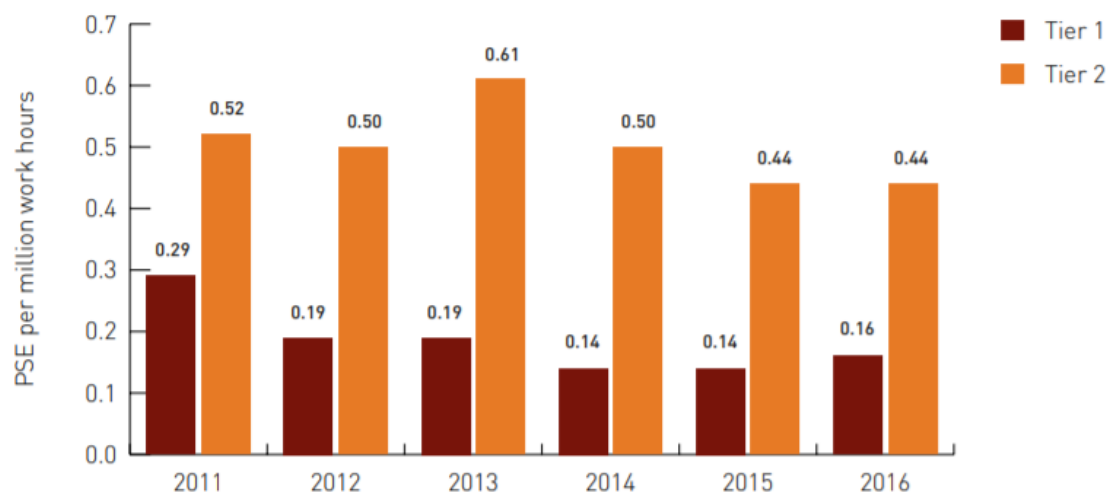
- Process safety performance across the industry and in Australia continues to show no discernible trend of continuous improvement
- The Australian industry is transitioning from a capital investment phase to become the world's largest exporter of LNG requiring a shift of emphasis towards operations and maintenance activities

Process Safety

Process safety remains a key focus for offshore oil and gas activities due to the potential for major accident events. Significant effort is being invested locally and internationally to improve process safety performance, which is made difficult because of the low frequency of these incidents.

Industry has adopted an American Petroleum Institute system of measuring process safety incidents with a tiered approach, where Tier 1 is the most serious and Tier 4 is the least.¹⁵

Figure 7 - IOGP Process Safety Events 2016¹⁶



¹⁵ American Petroleum Institute, 'Guide to Reporting Process Safety Events Version 3.0',
<http://www.iogp.org/bookstore/product/safety-performance-indicators-process-safety-events-2016-data/>.

¹⁶ International Association of Oil and Gas Producers, 'Safety Performance Indicators – process safety events – 2016 data',
<http://www.iogp.org/bookstore/product/safety-performance-indicators-process-safety-events-2016-data/>

Figure 8 - Australian Process Safety Performance

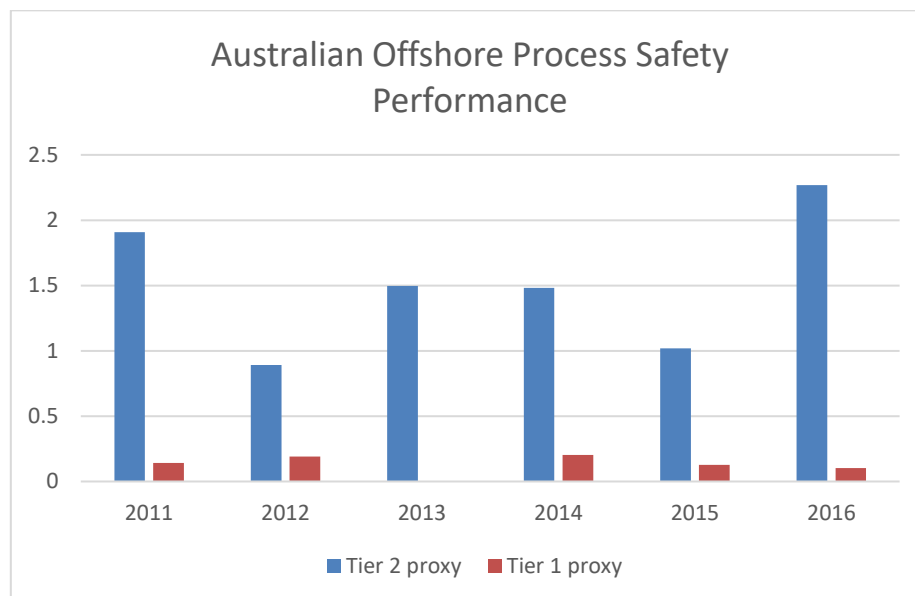


Figure 7 shows the rate of occurrence of Tier 1 and Tier 2 process safety events (major and minor loss of containment events) per million workhours. These classifications describe the following:

- Tier 1 proxy: number of hydrocarbon releases above 300kgs and pipeline releases above 12,500 litres (per million hours worked).
- Tier 2 proxy: number of hydrocarbon releases above 1-300kgs and pipeline releases 80-12,500 litres (per million hours worked).

The NOPSEMA Annual Performance Report describes similar minor and major loss of containment categories from both facilities and pipelines. Figure 8 shows a distillation of comparison across IOGP and NOPSEMA datasets. It is noted that neither Tier 1 or Tier 2 events show a discernible trend, despite the increased focus of IOGP and members on process safety.

Leveraging the new IChemE Safety Centre, the Australian industry has sought to move toward identification of a standardised industry set of leading process safety metrics. The belief is that a focus on improving the strength of preventative measures is likely to be more effective than a focus on reducing loss of containment events. Work is ongoing to demonstrate this relationship, though any learnings will be translatable to other high hazard industries.

Further work needs to be done to demonstrate this effect in practice, with success likely to positively influence all other high hazard industries with exposure to process safety risk.

Analysis of historical process safety events identifies that common and repeated root causes in major accident events are often not acknowledged due to cognitive bias.¹⁷ Significant work has been done internationally over the period to develop best practice guidance on process safety

¹⁷ Such as conducted by John Atherton and Frederic Gill for their book, "Incidents That Define Process Safety".



management systems, for example, the Energy Institute in Europe and the Occupational Safety and Health Administration in the USA.

The oil and gas industry in Australia has sought to supplement this approach in recent years by promoting a much broader understanding of process safety through a range of competency programs and by encouraging diversity in the review of process safety management.

The IChemE Safety Centre has developed a number of competency resources for industry, academia and the vocational training sector.

In addition, the industry Stand Together For Safety initiative produced a number of resources to expand participation in process safety interactions, including videos, promotional materials and “Process Safety – A Good Practice Guide”, which attempts to create a common set of principles for each phase of the oil and gas life cycle and examples of how the readiness of a given activity can be questioned to ensure risk controls are appropriate.

The lagging metrics collated by both IOGP and NOPSEMA demonstrate that despite these efforts, more needs to be done to affect a demonstrable improvement in process safety performance.

Industry-Driven Responses to Improving Safety

Incident Awareness and Knowledge Sharing

- **Data Reporting** - The international oil and gas industry is committed to the principle of continuous improvement in safety performance and works hard to identify and avoid the occurrence of safety incidents. This includes a broad collaboration on safety issues as part of a collective effort to ensure risks are reduced to as low as reasonably practicable. One example of this collaboration is provided by the ease of access to various safety performance datasets. The International Association of Oil and Gas Producers (IOGP) collects the most extensive dataset in the industry, reflecting several billion workhours on an annual basis. This data facilitates international collaboration on safety initiatives by assisting with the identifying of trends and areas for improvement.
- **High Potential Incidents** – A database of lessons learned from workplace incidents that seeks to disseminate information on avoiding incidents across a broad network of interested parties across the industry.
- **Institution of Chemical Engineers (IChemE) Industry Safety Centre (ISC)** – The Australian oil and gas industry provided seed funding to establish this international centre of process safety expertise in Australia in 2014. The centre seeks to promote excellence in process safety by sharing lessons and best practices across all relevant high hazard industries. In the past four years, IChemE ISC has published guidance on process safety competency and lead process safety metrics. Importantly it also works closely with the education sector to share learnings. This includes:
 - developing two process safety chapters, with the Safety Institute of Australia’s for the Australian OHS Education Accreditation Board’s Body of Knowledge that informs OHS training curricula across the country’s VET sector.



- Working with universities to enhance education in process safety, recently publishing recommended learning outcomes for undergraduate engineer programs and is developing resources to assist their teaching activities.
- Development of a world-first case study approach to assist all industry participants to learn from incidents.

In addition, the centre will continue to develop its work on lead process safety metrics and in enhancing process safety competency development, whilst encouraging increased industry standardisation. This includes expanding its database of immersive learning process safety study cases. The IChemE Safety Centre remains strongly supported by the oil and gas industry and continues to grow across other industry sectors both in Australia and internationally.

Safety Culture and Awareness

- **CEO Safety Leadership Forum** – A forum organised by APPEA that meets informally to review progress in safety performance, industry initiatives and provide guidance for future work.
- **Stand Together for Safety (STFS)** - an Australian oil and gas industry safety leadership initiative dedicated to promoting the highest standards of safety. It commenced in 2009, initially developing material to support a cross-industry safety event where all oil and gas activities are stopped for a day to engage on safety topics. HSR's participate at the highest levels of this initiative to underpin its relevance, working with industry CEO's and subject matter experts on the steering committee and working groups. Recent focus has been on process safety culture across the whole of the Australian oil and gas industry. Process safety materials were developed to embed a common process safety language and to enhance risk awareness of low likelihood, high consequence major accident events.
- **HSE Conference** – A knowledge sharing forum that provides the Australian oil and gas community with best practice sharing from Australia and overseas.
- **HSR Forum** – A forum, hosted by APPEA at the request of others, to engage workplace health and safety representatives and facilitate two-way exchange of challenges and opportunities.

Training and Competencies:

- **Common Safety Training Program** – The oil and gas industry designed a foundation training program for all offshore workers to ensure a core set of safety skills are demonstrated and assessed in a training situation and in the workplace. This program utilises a fully immersive, workplace simulation approach to developing safety skills and behaviours and includes an independent verification of competence. This is considered superior to time based re-certification strategy typical of most certification training programs. More than 13,200 CSTP cards have been issued to participants in APPEA's CSTP, including 1,050 in 2017.
- **Safe Supervisor Competency Program** – A higher level safety program that seeks to raise the competency of front line supervisors in managing others for safe outcomes. It was



developed in 2011 in recognition of the significant increase in first time front line supervisors and the critical role this group plays in transmitting safety messages and culture to the workforce. The SSCP delivers a practical hands-on learning experience for supervisors to develop the skills required to ensure work teams utilise appropriate safe behaviours in the implementation of work. The program provides the common and minimum safety skills and behaviours that all supervisors across the oil and gas industry need to lead safe teams.

- **Australian Centre for Energy & Process Training** – The oil and gas industry supported an initiative to establish ACEPT to improve the training of future operators. ACEPT is recognised as a world-class, specialist training facility that is aligned with the training requirements of the oil and gas, processing and resources industries.
- **National Energy Technicians Training Scheme** – A new Industrial Electrician Apprenticeship has been created to deliver a multi-skilled 'Industrial electrician with Instrumentation' training. In addition, a Production Operator Apprenticeship has been created to specifically focus on year 12 students and underrepresented groups. This will embed HSE and process behaviours in foundation skills as part of lifelong learning in the industry.

SaferTogether

In recognition of the need to coordinate a common approach to the management of safety in the Coal Seam Gas sector, companies collaborated to establish a common platform in 2014 – SaferTogether.

The industry-led body has working groups dedicated to safety leadership, competency and behaviour, land transport, process safety and rig site safety.

At the AOG Conference in 2018, the combined Western Australia-Northern Territory chapter of SaferTogether was launched. This body is expected to invest significant resources into further improving safety of onshore and offshore projects in these jurisdictions.

The establishment of the SaferTogether WA-NT chapter recognises the shifting environment from a period of major capital investment to one of a greatly enhanced operations and maintenance activity. SaferTogether aims to bring a collaborative approach to safety at the work site, by providing a collective effort between the operators, service companies and the front-line workforce. Safer Together will seek to:

- Work collaboratively to build a pervasive culture of safe behaviours and promote learning by sharing information and good practices
- Simplify, standardise and embed consistent industry requirements and develop practical, effective solutions that have industry-wide application.
- Engage with regulatory bodies regarding practical deployment of standardisation initiatives and to promote information sharing.

It is proposing a number of work programs to progress safety in relation to leadership, competence, process safety, rig site safety, land transport, marine and aviation. These groups,



overseen by a Safety Leaders Group, will work collaboratively towards achieving the best safety outcome across these work programs.

The Role of Health and Safety Representatives

As already discussed in this submission, companies need to create working environments where individuals can take on leadership responsibilities from any position. The roles of Health and Safety Representatives (HSRs) and HSE Committees, as defined in the Act, are highly valued in this regard.

Oil and gas companies provide multiple avenues for all staff to raise health and safety concerns, directly through company processes, via HSRs or even anonymously via independent services or the regulator. Feedback from HSRs is discussed later in this submission.

The following sections represent advice provided to APPEA by member companies in relation to the role and satisfaction of HSRs.

CHALLENGES IN ATTRACTING AND RETAINING HSRs

Feedback from companies indicates that attracting and retaining HSRs does not appear to be a prevalent issue in the industry. While contractor turn-over can present challenges for retaining HSRs, there does not appear to be a challenge in attracting representatives to these positions.

Various models are used to ensure this role does not present a burden on the representative. One facility has adopted a deputy position, where an individual is supported for twelve months and then takes on the lead position. The lead then steps down and another individual takes on the deputy position. This facilitates easing the individual into the role.

The allocation of time for undertaking the role of an HSR differs across companies and facilities. Managing the commitments of the HSR role while undertaking other duties is an area of focus for companies.

Companies indicated a strong level of support for HSRs, including providing avenues of communication through to the most senior levels of companies.

THE ADEQUACY OF THE PROTECTIONS AFFORDED TO HSRs PERFORMING THEIR FUNCTIONS UNDER THE RELEVANT LEGISLATION

Companies have reported that HSRs indicate they generally feel supported by their colleagues and management to undertake their role. The work force and HSRs have reached a level of confidence in processes and culture that they feel empowered to raise issues with management.

POLICIES AND PRACTICES WHICH COULD BE ADOPTED BY NOPSEMA TO BETTER SUPPORT HEALTH AND SAFETY REPRESENTATIVES;

Feedback indicates the following feedback regarding interaction of NOPSEMA with HSRs:

- NOPSEMA consultation with HSRs every offshore visit is seen to be positive and supportive.
- Continuation of open communication with the facility HSR is encouraged.

FACTORS IMPACTING ON THE WORK HEALTH AND SAFETY OF WORKERS IN THE OFFSHORE PETROLEUM INDUSTRY

Factors are wide ranging but largely recognised and with programs or plans in place – FIFO-related mental health and stress issues, ageing assets with inherent ergonomic issues that require ongoing management, misalignment of safety culture and expectations between operators and third party contractors (whom still make up a significant proportion of recordable incidents), perceived burden of processes and paperwork

The level of satisfaction of HSRs, evident in the feedback received by APPEA from member companies, appears to align with NOPSEMA data with one OHS complaint received in 2016.¹⁸

Offshore health and safety regulatory framework

APPEA supports streamlined and objective-based regulatory frameworks, which deliver consistent assessments within predictable timeframes.

For a number of years, APPEA has advocated for a more consistent regime for regulation of safety activities across Australia. The current structure of multiple and duplicative regimes which govern the industry's activities, in many cases, does not contribute to increased standards or outcomes. APPEA would encourage the Committee to consider improvement in the consistency of safety regulation through this Inquiry.

The safety case legislative framework applied in Australia and overseas, places significant focus on the need for duty holders to demonstrate continuous improvement in safety performance. In this context, the role of regulators is to scrutinise the methodology for identifying and managing risks.

Regulators are also well placed to encourage the cross-fertilisation of best practice as they have a unique perspective of performance across multiple facilities. APPEA agrees with the view expressed by NOPSEMA in their Annual Performance Report 2016, that "objective based regulation is recognised internationally by regulatory authorities, risk management professionals and academics as being the most appropriate regulatory framework for high hazard industries".

Supported Principles of Regulation

¹⁸ NOPSEMA, 'Annual Offshore Performance Report 2016', <https://www.nopsema.gov.au/assets/Publications/A552578.pdf>



For industries which operate in dynamic, high risk environments and are subject to rapid technological change, innovation and continuous improvement in performance require flexible regimes which encourage 'best practice' outcomes.

Frameworks which prescribe standards are often unable to keep pace with innovation without regular amendment processes to guidelines or regulations. As a result, prescriptive frameworks potentially require approaches which do not provide the safest work environment possible.

Regulations should set clear objectives and provide the flexibility for those interpreting the regulations, such as petroleum operators, to determine the appropriate risk management approach. In this context, the role of a regulator is to validate that the reasoning for a risk management approach is sound and based on robust evidence. In this regard, regulation should reflect the following broad principles:

- Provide clear objectives and transparent oversight:
 - The rationale for any regulation must be well defined and understood, noting that regulation may not always be the most effective mechanism to manage risk;
 - There should be transparent, clear, uniform and predictable processes for implementation.
 - Regulation should account for environmental, safety, economic and social objectives.
 - Subject to continual review to assess ongoing value and relevance.
- Be underpinned by sound science and evidence:
 - Regulation should be based on robust and reliable information to manage well-defined risks.
 - The information, science and evidence used to underpin regulations should be transparent
- Be risk-based and focused:
 - Recognise that risk-based frameworks are more effective at adapting to risk and changing circumstances (technology, environments, science and financial arrangements) than prescriptive standards
 - The ongoing compliance activity and costs imposed on governments and proponents are appropriate to the risks and impacts
- Have transparent processes supported by guidance which explains regulatory expectations
 - Guidance should be flexible enough as to not to become prescriptive regulation by stealth.

Application of the Safety Case Framework in Commonwealth Waters

SAFETY CASE

A facility cannot be constructed, installed, operated, modified or decommissioned without an appropriate safety case for the stage of the facility.

Offshore facilities (and associated offshore place) are defined under Schedule 3 of the OPGGS Act, and are intended to include those vessels and structures that present a safety risk to a significant number of people due to the presence of hydrocarbons.

A safety case under the *Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations* 2009 must include¹⁹:

- A full description of the facility;
- A formal safety assessment (FSA) of potential major accident events, for example identification of all hazards that have the potential to cause a major accident event and a detailed and systematic assessment of the risks;
- Identification of the technical and other controls that are necessary to reduce the risks to a level that is low as reasonably practicable (ALARP) and a fully justified case as to why and how ALARP has been achieved (including what Australian and International Standards that are being applied and why they are appropriate and achieve ALARP;
- Identification of the performance standards expected of each control (or barrier) to ensure the controls/barriers are achieving what they are supposed to;
- Monitoring of those standards to make sure they are actually achieving what they are supposed to in practice;
- A detailed description of the safety management system and how it is implemented (so that it achieves the continuous and systematic assessment of hazards and control to ALARP of hazards and risks);
- Command structure and responsibility for safe operations;
- Means by which the operator will ensure that each member of the workforce has the necessary skills, training and ability (including for abnormal or emergency conditions);
- A documented permit to work system for coordinating and controlling the safe performance of all work activities;
- A detailed description of the evacuation, escape and rescue analysis – and this has to take into account the types of emergencies that could occur, including extreme weather conditions;
- Identification of the technical and control measures necessary to reduce the risks associated with emergencies to ALARP;
- A fire and explosion risk analysis, and detailed technical and other controls necessary to reduce the risks associated with fires and explosions to a level that is ALARP;

¹⁹ This list is not a full description of all regulatory requirements.

- Emergency communications systems and control systems in the event of an emergency; and
- A full emergency preparedness and response plan and evidence of how the plan will be implemented.

VALIDATION

Acceptance of the safety case by NOPSEMA is contingent on a satisfactory validation²⁰.

A safety case revision is required if an operator proposes to significantly change an existing facility beyond the scope envisaged by the safety case. For example, modification or decommissioning of a facility requires a revised safety case and validation.

Validation is focused on safety-critical hardware, firmware and software. The validation must establish, in the case of a proposed facility, that the design, construction and installation (including instrumentation, process layout and process control systems) of the facility incorporate measures that:

- will protect the health and safety of persons at the facility;
- are consistent with the formal safety assessment (FSA) for the facility; and
- in the case of an existing facility — that, after any proposed change or changes, the facility incorporate measures that will protect the health and safety of persons at the proposed facility.

Through this process, NOPSEMA must be satisfied that the validator has the necessary independence, competence, ability and access to data to arrive at an independent opinion on the matter.²¹

²⁰ Offshore Petroleum and Green House Gas Storage Act and Safety Regulations; NOPSEMA Policy Documents at <http://www.nopsema.gov.au/safety/safety-case/>

²¹ T. Hunter and J. Paterson: Offshore Petroleum Facility Integrity in Australia and the United Kingdom: A Comparative Study of Two Countries Utilising the Safety Case Regime (OGEL, ISSN 1875-418X, October 2011)

An independent expert regulatory authority

The Commonwealth's offshore petroleum safety regime has been subject to three statutory and independent reviews, including consideration of the operational effectiveness of NOPSA in 2008 and 2011 and NOPSEMA in 2015.

These reviews have found that NOPSA/NOPSEMA have provided competent safety regulation of the offshore petroleum sector.

Each review has made recommendations to ensure continuous improvement of the regime and to implement previous decisions made by the Australian Government, in particular from the Productivity Commission, Varanus Island and Montara Inquiry Reports.

Independent Reviews of NOPSEMA

AUSTRALIAN NATIONAL AUDIT OFFICE (2014)

In 2014, the Australian National Audit Office (ANAO) released the results of an audit of NOPSEMA and the effectiveness of its regulatory function.¹⁶ The ANAO found that, overall, NOPSEMA had appropriately integrated arrangements for its expanded functions and had established a sound framework for the regulation of safety, environment and well integrity for the offshore petroleum industry.

The ANAO also recommended some improvements to NOPSEMA's governance arrangements and aspects of its administration of its regulatory functions.

The ANAO made three recommendations focusing on: enhancing aspects of existing governance arrangements; developing individual facility risk profiles to inform safety inspection planning; and prioritisation of recommendations on matters related to compliance while addressing better practice aspects in inspection reports.

REVIEW OF NOPSEMA BY NOETIC (2015)

While NOPSA was reviewed in 2008 and 2011, the first review of NOPSEMA was undertaken by The NOETIC Group in 2015. All previous reviews of NOPSEMA, including any previously-identified areas for improvement, were taken into account in this review.

The review panel noted that it considered good HSE performance was indicated by the "absence of events which injure people and the environment, or which have the potential to do so."

The panel's assessment of the operational effectiveness of NOPSEMA came to an overall conclusion that "NOPSEMA is an effective regulator that has made positive contributions to improving safety, well integrity and managing Australia's offshore environment."²²

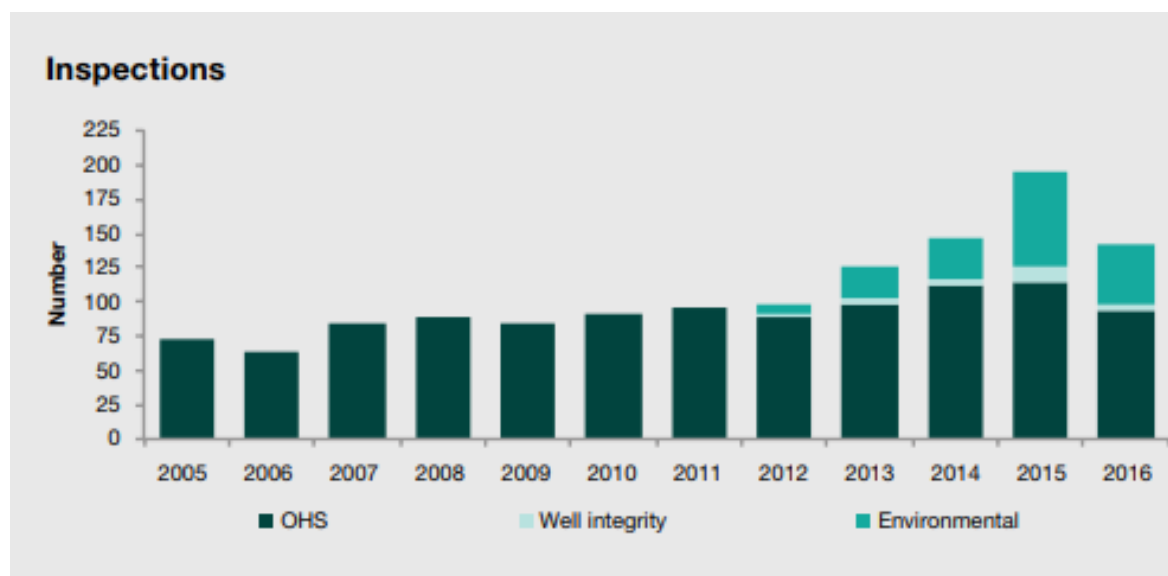
In relation to safety, the panel found that "NOPSEMA is effective in regulating personal safety, so far as the improving trend personal safety data can be taken as an indicator."

NOPSEMA's Activities

The review of NOPSEMA by NOETIC took account of the regulator's use of enforcement. It found that "NOPSEMA has an adequate set of enforcement tools available, and appears to be using those tools appropriately"²³

In relation to the frequency of inspections to identify potential breaches of the regulations, NOPSEMA's data shows that it undertook 93 OHS inspections at 112 different facilities or associated business premises across Australia in 2016, compared to 114 inspections in 2015. As a result, a total of 1021 recommendations were issued.

Figure 9 - NOPSEMA Inspections 2016²⁴



While there were no accidents or dangerous occurrences in 2016 that warranted NOPSEMA initiating a major investigation, fourteen incidents had high risk categories and were subsequently investigated.

The priority investigations were conducted at MODUs (9), platforms (2), FPSOs (2) and vessels (1). In addition, a further 117 incidents had a follow up decision of 'investigate'. Of these, 87 (74%) had a linked inspection (i.e. planned follow up at the next periodic inspection visit to the

²² Department of Industry and Science, '2015 Operational Review of the National Offshore Petroleum Safety and Environmental Management Authority', <https://www.nopsema.gov.au/assets/Corporate/2015-Operational-review-of-NOPSEMA.pdf>.

²³ Ibid., P. 41

²⁴ NOPSEMA, 'Annual performance report 2016', <https://www.nopsema.gov.au/assets/Publications/A552578.pdf>.

facility). In 2016, a further 173 incidents were considered to have a minimal risk potential and were not investigated in detail. However, some operators provided follow up information to NOPSEMA.

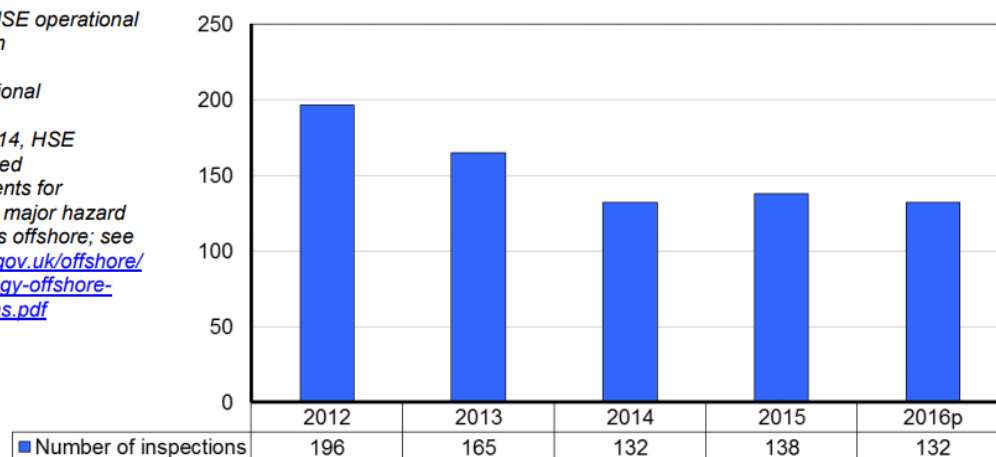
It is noted that NOPSEMA's level of inspection is only marginally below the 132 inspections undertaken by the UK HSE Energy Division, which covers 273 operational installations.²⁵

Figure 15: Number of inspections undertaken by HSE Energy Division – Offshore at offshore installations, 2012 – 2016p

Source: HSE operational information

p = Provisional

In April 2014, HSE implemented arrangements for prioritising major hazard inspections offshore; see www.hse.gov.uk/offshore/methodology-offshore-installations.pdf



Regulatory improvement – opportunity for conferral

APPEA believes that conferral of regulatory responsibility for petroleum activities in State Waters to the National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA) has broad benefits and should be supported.

For industry, conferral would simplify the regulatory system with the potential to replace four Commonwealth and State regulators with a single regulator. Streamlining regulation would reduce compliance costs, enhance Australia's reputation and deliver seamless environmental and safety management.

For State and Territory governments, conferral would allow a greater focus on activities solely within jurisdictional boundaries.

The benefits of a national regulator for all waters seaward of the low tide water mark were first mooted by the Productivity Commission.²⁶ In 2004, the Commonwealth streamlined

²⁵ UK Health and Safety Executive, 'Offshore Statistics & Regulatory Activity Report 2016', <http://www.hse.gov.uk/offshore/statistics/hsr2016.pdf>

²⁶ Australian Government Web Archive, Commonwealth Government response to the Productivity Commission Review of Regulatory Burden on the Upstream Petroleum (oil and Gas) Sector, <http://webarchive.nla.gov.au/gov/20130904061232/http://www.ret.gov.au/Department/responses/pc-review/Pages/pc-review.aspx>



arrangements within its waters, delivering an estimated annual saving to industry and the community of about \$120 million.

APPEA encourages the Committee to consider the benefits of NOPSEMA having regulatory oversight of all offshore areas through this inquiry.

Attachment 1 – Background Information

History and Evolution of the Regulatory Regime for Offshore Petroleum Safety

Offshore petroleum activities have been a common feature of our modern economy for decades, often taking place in challenging environments.

Petroleum facilities are designed and operated to withstand extreme weather, sea conditions and also importantly, the temperatures and pressures associated with producing and processing hydrocarbons. Many of these same facilities also provide living quarters for the workforce in a relatively restricted space.

These challenges are not specific to Australia and global regulatory regimes have evolved to manage these challenges. In this regard, a significant development was the introduction of the 'safety case' approach to regulation for the offshore petroleum industry, which occurred three decades ago. This was heavily influenced by the outcomes of two Inquiries by the United Kingdom Government:

- 1972 Lord Robens' Report on the regulation of workplace safety and health across all industries in the UK; and
- 1988 Lord Cullen Inquiry findings into the Piper Alpha disaster in the North Sea.

Australia's safety regime has been further refined by the outcomes of inquiries into the Varanus Island gas pipeline rupture (2008), the Montara uncontrolled hydrocarbon release (2009) and the Macondo oil spill in the Gulf of Mexico (2010). The reviews into the two Australian incidents are discussed in further detail below.

United Kingdom Government Inquiries (Robens and Cullen)

ROBENS COMMITTEE OF INQUIRY

The Robens' Committee of Inquiry was established by the British Government in 1970. Its role was to investigate concerns that the traditional system of safety regulation, based upon the framework of the nineteenth century British Factory Acts, was too rigid and complex and unable to keep pace with social, economic and technological change.

Following review of the 'mass' of safety legislation, the Committee concluded that this framework had not led to a significant reduction in the incidents of fatalities and injuries at work. The Robens' Inquiry identified three main issues with the existing prescriptive approach to safety regulation:

- There was too much prescriptive law relating to health and safety at work which had the effect of persuading people that health and safety was purely a matter of government regulation and not of individual responsibility;
- Too much of the existing law was irrelevant to real problems; and



- There was a major disadvantage in attempting to address the problem of health and safety with the wide array of administrative agencies with responsibilities.

The Robens' Inquiry concluded that:

*"[t]here are severe practical limits on the extent to which progressively better standards of safety and health at work can be brought about through negative regulation by external agencies. We need a more effectively self-regulating system. This calls for the acceptance and exercise of appropriate responsibilities at all levels within industry and commerce. It calls for better systems of safety organisation, for more management initiatives, and for more involvement of work people themselves. The objectives of future policy must therefore include not only increasing the effectiveness of the state's contribution to health and safety at work but also, and more importantly, creating conditions for more effective self-regulation."*²⁷

Recognising that the weaknesses identified by Robens existed within Australia, most Australian jurisdictions enacted new occupational health and safety (OHS) statutes based, to varying degrees, on the model proposed by Robens. Each of the Australian OHS statutes adopted the tiered approach recommended by the Robens' Committee.

The first tier is the Act and includes broad, overarching general duties for those who influence or exercise control over OHS in workplaces. This also includes consultation and representation provisions, and provisions to help enforce the Act.

A second tier contains more detailed provisions, obligations and requirements within regulations, which is complemented by guidance on how to comply with the Act and regulations. Recent developments with national harmonisation and workplace health and safety legislation remain fundamentally aligned with the Robens approach, although have changed over time in line with the structure of workplace arrangements (for example, contract structures).²⁸

Safety regulation of the Australian petroleum industry has gone further than these improvements, and adopted the safety case approach while also retaining the OHS general duty of care provisions.

This design has the benefit of addressing two interrelated aspects of safety. The first aspect is protection of the safety and health of the workforce (traditionally referred to as personal safety). Fundamentally, this requirement exists for any industry or workplace in Australia. Petroleum safety regulation at this level generally reflects Lord Robens' findings and is consistent with developments in general workplace health and safety regulation across Australia.

²⁷ Lord Robens, *Safety and Health at Work: Report of the Committee 1970-1972* (HMSO, 1972)

²⁸ Workplace Relations Ministers Council: *Comparison of Occupational Health and Safety Arrangements in Australia and New Zealand*: (ISBN No. 978-0-642-32799-4, 5th Edition, 2008)



The safety case regime applying to petroleum operations also addresses a second critical aspect - the prevention and mitigation of catastrophic events that could result in multiple casualties/fatalities and significant damage to assets and the environment.

In Australia's offshore petroleum regulatory regimes these events are often referred to as major accident events or MAEs. These MAEs are low-probability but high-consequence events. Potential MAEs in the petroleum industry include for example, well blowouts, loss of containment of hydrocarbons (ignited or non-ignited), explosions, fires and collisions.

CULLEN INQUIRY

The 1988 Piper Alpha disaster in the North Sea, and subsequent investigation and report by Lord Cullen, played a major role in Australia adopting a 'safety case' approach to the regulation of these low-probability but high-consequence events in the petroleum industry.

The Cullen report found that in complex, dynamic and high risk activity such as hydrocarbon processing facilities, it is essential that the responsibility for managing the risks lies at the point of operations²⁹.

As a result, the UK moved away from prescriptive regulation, with minimum compliance standards, towards an objective-based approach. In this regime, the onus is placed on the operator, not the regulator, to demonstrate through a safety case that they have reduced the risks associated with their operations to as low as reasonably practicable (ALARP).

History of Petroleum 'Safety Case' Regulation in Australia

Following the 1988 Piper Alpha disaster, Australia introduced a safety case obligation to strengthen the implementation of the Robens'-style duty of care regime.

As noted in the Explanatory Memorandum to the *Petroleum (Submerged Lands) Amendment Bill 2003*:

*"The term 'safety case' is used to describe a sophisticated, comprehensive, integrated risk management system. This is characterised by an acceptance that the direct responsibility for the ongoing management of safety on individual facilities is the responsibility of the operators and not the regulator."*³⁰

The primary objective of a safety case is the prevention of MAE's, with the fundamental driver of 'continuous improvement' (in relation to pursuit of new technologies, technical knowledge and experience) rather than minimum compliance.

²⁹ Cullen, The Hon. Lord W. Douglas (1990): The public inquiry into the Piper Alpha disaster (London H.M. Stationery Office, ISBN 0101113102, 488 pages, 2 volumes

³⁰ See: www.comlaw.gov.au/Details/C2004B01497/Explanatory%20Memorandum/Text



In 1999, the Commonwealth Government commissioned a review of offshore petroleum safety in Australia, in response to concerns over the adequacy of existing regulatory arrangements. At the time, the States and Northern Territory (NT) oversaw day to day offshore regulation using a combination of the safety case approach and prescriptive legislative rules.

The review included an evaluation of the structure and implementation of Australia's offshore petroleum safety management, undertaken by an Independent Review Team (IRT) of offshore safety experts. The review included substantial and broad engagement with operators of facilities, executives and line management, workforce representatives, State/NT regulators and Federal officials.

The final report, *Future Arrangements for Regulation of Offshore Petroleum Safety* was published in 2001. The report identified a number of shortcomings in the legislative and administrative structures for regulating safety. It recommended revision of laws and a restructure of the regulatory system through establishment of a national petroleum safety regulatory authority.

Key findings of the IRT were³¹:

- the Australian legal and administrative framework and its day-to-day application for the regulation of health, safety and environment was complex and insufficient to ensure appropriate and cost efficient regulation of the offshore petroleum industry;
- there were too many acts, directions and regulations for offshore petroleum activities, with unclear boundaries and inconsistent application;
- the role of the Designated Authorities was unclear and undefined;
- the regulators appeared to have inconsistent philosophies, procedures and approaches to regulation, both in regard to the discharge of their role in safety case development and assessment, and in regard to auditing activities; and
- resourcing all of the regulators with competent and experienced personnel to work with what are often complex work activities was a real concern, and salary levels made it difficult to recruit and retain a critical mass.

On 13 September 2002, the Ministerial Council on Mineral and Petroleum Resources (MCMPR) reconfirmed their priority for improving safety in Australia's offshore petroleum industry. The MCMPR, comprising State/Territory and Federal Ministers with a responsibility for petroleum activities from across Australia, endorsed the formation of an independent national offshore safety authority.

MCMPR agreed that a new National Offshore Petroleum Safety Authority (NOPSA)³² would not only regulate federal waters, as the IRT recommended, but regulate both Federal and State/NT

³¹ Depart. Industry, Science and Resources, Offshore Safety and Security, Petroleum and Electricity Division: Future arrangements for the Regulation of Offshore Petroleum Safety/Australian offshore Petroleum Safety Case Review (Canberra, 2001)

³² Now NOPSEMA



waters. This was to ensure a consistent regulatory approach for industry across all jurisdictions. NOPSAs were accountable to the Commonwealth, State and NT Ministers.

NOPSAs began operations on 1 January 2005. However, the original intent of the ministerial agreement, which was for the maintenance of one offshore petroleum safety regulator, is still yet to be achieved.

The safety regime for offshore petroleum operations is set out by Schedule 3 to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGGS Act) and its associated regulations for Commonwealth waters. Similar provisions apply in designated coastal waters but only where States and the Northern Territory have made legislation that mirrors Commonwealth legislation.

Further Evolution of the HSE Regulatory Environment

Safety regulation of the offshore operations of Australia's oil and gas industry has been subject to numerous and regular reviews over decades. These have repeatedly confirmed the appropriateness of the safety case regime and presented opportunities for further improvement streamlining of administrative arrangements.

PRODUCTIVITY COMMISSION REVIEW OF REGULATORY BURDEN

In March 2008, the Council of Australian Governments (COAG) announced the Productivity Commission (PC) Review of the regulatory burden on the upstream petroleum (oil and gas) sector.³³

This focussed on Australia's framework for upstream petroleum regulation and opportunities for streamlining regulatory approvals, providing clearer timeframes and removing duplication between jurisdictions.

Recommendation 10.3 from this review, outlined below, identified the need for States and Territories to maintain consistency with the Commonwealth requirements for safety regulation of the offshore petroleum industry.

Box 1 - Productivity Commission, Review of the Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector

RECOMMENDATION 10.3:

- *Separate policy and regulatory; objective-based legislation; statutory timeframes; increased transparency in reporting requirements and timeframes*
- *Governments should review and update all existing legislation to ensure it is consistent with the features of best practice regulation and good regulatory design. In particular, updated legislation and its administration should:*
- *Separate policy advice from regulation where practicable - where not practicable, for example due to scale particularly in smaller jurisdictions, reliance on appropriate checks*

³³ 2009, Productivity Commission, *Review of the Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector*

and balances and transparency in policy and regulation making processes will be increasingly important.

- *Promote the use of objective-based legislation where feasible.*
- *Ensure approval processes are best practice and clearly defined.*
- *Set statutory timelines for individual regulatory decisions (any decision should include a 'stop the clock' mechanism). There should be two timelines: one excluding periods when the 'clock' is stopped and one including all time elapsed. There should also be disclosure of reasons for regulators requesting additional information, and measurement and public disclosure of their performance against these targets.*
- *Measure and report overall timelines taking into account all stages of key regulatory processes (including scoping, advising, consultation and decisions).*
- *Be consistent with the definitions, format and approach of the updated Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cwlth).*
- *Provide clear guidelines where feasible on information requirements to assist proponents in efficiently providing the necessary information to allow timely regulatory decisions.*
- *Ensure reporting requirements are clear, justified, and avoid duplication and overlap with other mandatory reporting requirements.*

The Australian Government's response to the PC review, Montara Inquiry and other reports (see sections below) culminated in the expansion of Australia's offshore petroleum regulator in Commonwealth waters.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is now responsible for the regulation of the three critical and interrelated areas of safety, well integrity and environmental management in Commonwealth waters through the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and supporting Regulations.

VARANUS ISLAND INQUIRY

In 2009, an expert panel investigating the Varanus Island gas pipeline rupture and explosion³⁴ endorsed an augmented duty of care/safety case regime as appropriate for regulation of complex, high hazard industries such as offshore petroleum. The 'augmented' component was to include regulation of 'integrity' (wells) into the Commonwealth offshore petroleum safety regime. This was implemented in 2011.

The panel also found that the various offshore regulatory regimes produced a complex framework of jurisdictional legal process and regulatory interfaces which were an impediment to positive safety outcomes. Recommendations were made to simplify, streamline and strengthen regulation and administrative approaches by regulators.

A number of those recommendations were implemented in the Australian Government's Final Response to the Montara Commission of Inquiry, discussed further below.

³⁴ Bills, K. and Agostini, D., *Offshore Petroleum Safety Regulation Better Practice and the Effectiveness of the National Offshore Petroleum Safety Authority*, Department of Resources, Energy and Tourism, June 2009

MONTARA COMMISSION OF INQUIRY

The June 2010 Report of the Montara Commission of Inquiry (the Report) made 105 recommendations with implications for governments, regulators and the operational procedures and practices of the offshore petroleum industry. In the Final Government Response, the Government accepted 92 recommendations and noted 10.³⁵

Implementation of the Government's response included a suite of initiatives, such as amendments to legislation and improvements to strengthen institutional arrangements. The most significant of which was the expansion of NOPSA into the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), through amendment of *the Offshore Petroleum and Greenhouse Gas Storage Act 2006*. These amendments provided NOPSEMA responsibility for regulating safety, well integrity and environmental aspects of petroleum activities.

Further amendments included:

- the introduction of a civil penalty regime, which will provide the regulator with an alternative enforcement tool aimed at improving compliance outcomes;
- increasing the current criminal penalty levels under the *Offshore Petroleum and Greenhouse Storage Act 2006* (the Act) to bring them in line with other major hazard industry legislation;
- harmonisation of OHS offence penalties with the Work Health and Safety Act 2011 to reflect the greater consequence involved in a major hazard industry;
- redrafting of the Act to allow for the future triggering of the standard monitoring and investigation powers in the proposed *Regulatory Powers (Standard Provisions) Bill 2012* (the Regulatory Powers Bill), which will enable NOPSEMA inspectors to use the monitoring and investigation powers in the Regulatory Powers Bill to monitor and investigate compliance with all obligations of persons under the Act and associated regulations; and
- enabling the parties responsible for administering the Act to share information in appropriate circumstances.
- implementing a range of alternative enforcement mechanisms, such as infringement notices, adverse publicity orders, injunctions and continuing penalties;
- enabling NOPSEMA inspectors to issue environmental prohibition notices and environmental improvement notices to require petroleum titleholders to take action where required to remove significant threats to the environment;

³⁵ Australian Government, 'Final Government Response to the Report of the Montara Commission of Inquiry', <https://industry.gov.au/resource/UpstreamPetroleum/MontaraInquiryResponse/Documents/FinalMontaraCommissionInquiryReport.pdf>



- requiring NOPSEMA to publish OH&S and environment improvement notices and prohibition notices on its website;
- implementing an express polluter pays obligation in the OPGGS Act and a third party cost recovery mechanism. This includes providing State and Northern Territory governments with a statutory course of action against titleholders in the event the government(s) incur clean-up costs in their coastal waters or onshore; and
- clarifying financial assurance requirements in the OPGGS Act.