

# Annual Offshore Performance Report

Safety and environmental performance of  
Australia's offshore petroleum industry

to 31 December 2017



NOPSEMA

[nopsema.gov.au](http://nopsema.gov.au)

# Preface

Welcome to the *Annual Offshore Performance Report* published by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This report contains data gathered through NOPSEMA's regulatory functions covering occupational health and safety, well (structural) integrity and environmental management of offshore petroleum facilities and activities in Commonwealth waters (and coastal waters where functions had been conferred) to 31 December 2017.

Copies of this report are available to download at [nopsma.gov.au](http://nopsma.gov.au) or by contacting:

NOPSEMA Communications

GPO Box 2568

Perth WA 6001

phone: +61 8 6188 8700

email: [communications@nopsma.gov.au](mailto:communications@nopsma.gov.au)

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*This report contains data gathered through the exercise of NOPSEMA's regulatory powers and functions in Commonwealth waters (and coastal waters where powers and functions have been conferred) under the Offshore Petroleum and Greenhouse Gas Storage Act 2006. The report is intended to provide general information only and its contents should not be relied on as advice on the law, nor treated as a substitute for professional advice. Every effort has been made to ensure the accuracy of the material contained in the report.*

*NOPSEMA, on behalf of the Commonwealth disclaims to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs that may be incurred as a result of information in this report. Reference to the Commonwealth includes a reference to any contractor, agent or employee of the Commonwealth.*

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# Message from the chief executive officer

Welcome to the Annual offshore performance report for the 2017 calendar year. This report includes information collected by NOPSEMA (and formerly NOPSA) in the exercise of its functions and powers within its jurisdiction from 1 January 2005 to 31 December 2017. The statistical information contained in this report has been obtained through the full range of NOPSEMA's regulatory activities, including assessments, inspections and investigations. NOPSEMA publishes this information, collected under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act) and associated regulations, as part of its role to promote compliance by the offshore petroleum industry and share lessons learnt.

In 2017, hours worked offshore rose to 12.8 million hours, a 31% increase on the 9.7 million hours worked offshore in 2016. This increase in offshore hours was largely attributable to the unprecedented level of commissioning of new liquefied natural gas (LNG) facilities. During 2017, there were four LNG facilities being commissioned simultaneously. This level of commissioning was probably unprecedented in Australia, so the strain on the capacity of industry to resource this activity with skilled and experienced staff was considerable.

Despite this increase in offshore hours, there were encouraging results in a number of key safety indicators. For the fifth consecutive year there were no fatalities. The 293 dangerous occurrences (including false alarms) was the lowest number in a decade and the 52 injuries was the lowest number since the inception of NOPSA in 2005. This positive injury performance was reflected in the total injury rate of 4.07 per million hours worked, which was the second lowest total injury rate since 2005. However, four workers received major injuries in 2017, ending a record 15 consecutive months without a major injury occurring offshore. There were also six lost time injuries resulting in workers having three or more days off work. While the number of these injuries is well below the 2005 to 2017 long-term averages, their occurrence is concerning nonetheless. Digging deeper, there were also a higher number of near misses reported in 2017. Industry must remain vigilant and focus its attention on learning from these events to prevent future occurrences.

Preventing major accident events (MAEs) is essential to protecting the safety of people at facilities and the environment. The duty to prevent MAEs is a shared responsibility of operators, titleholders, equipment suppliers, contractors and the workforce. NOPSEMA also plays a key role through its compliance monitoring and the investigation of incidents in identifying situations where inadequate or failed barriers and systems could lead to a MAE. During 2017, NOPSEMA's compliance monitoring and investigation of incidents identified more than 1348 non-compliances to be corrected through inspection recommendations. These non-compliances ranged from relatively minor opportunities for improvement to serious deficiencies that resulted in enforcement action. NOPSEMA pursued a range of enforcement actions including the issuing of 32 improvement and prohibition notices during 2017. These enforcement tools are well recognised as highly effective in driving a return to compliance. The enforcement actions issued in 2017 have ensured the correction of underlying issues in barriers and systems that were in place to prevent MAEs and/or major loss of containment events.

While NOPSEMA recognises the importance of preventing the potential catastrophic consequences of a MAE, the day-to-day personal safety of the workforce should also be at the forefront of all operations. The offshore workforce operate in a potentially dangerous environment and we owe those workers the safest conditions that can practically be achieved. NOPSEMA's compliance efforts are aimed at ensuring that workers, and the marine environment, are kept safe from both MAEs and day-to-day hazards. Workforce participation is central to improving safety risk management on offshore facilities. The OPGGS Act requires ongoing workforce involvement throughout the safety case lifecycle and NOPSEMA places considerable emphasis on workforce participation during its offshore inspections. Ongoing workforce involvement fosters greater ownership of the safety case and confidence that robust arrangements are in place to protect them. The workforce must also be empowered to raise both safety and environmental management concerns with management.

NOPSEMA continues to maintain that safety is the number one priority for every individual working in the offshore industry – executives to front line workers. Sharing knowledge and perspectives is an important component on driving improved safety outcomes. NOPSEMA is pleased to see the expansion of industry-wide improvement initiatives, such as Safer Together and the IChemE Industry Safety Centre. While NOPSEMA welcomes the development of initiatives like Safer Together, which provides greater scope for contractor participation, it is essential that individual companies maintain safety as their overriding priority. NOPSEMA expects to see such a strong commitment to safety demonstrated from senior executives through to operational staff.

Another area requiring increased industry focus is uncontrolled hydrocarbon releases. Uncontrolled hydrocarbon releases have the potential to harm both the marine environment and the lives of persons working at facilities. There were 29 uncontrolled hydrocarbon releases in 2017, which was the second consecutive year that the number of releases increased. Through its assessment and compliance functions NOPSEMA ensures that duty holders have comprehensive measures in place to prevent, detect, control and, when they occur, mitigate such releases. Where it is identified that these measures are not being maintained, NOPSEMA will initiate enforcement action to ensure a return to compliance. Throughout 2017, NOPSEMA inspectors issued multiple enforcement actions against duty holders relating to hydrocarbon releases. These enforcement actions required duty holders to take appropriate measures to rectify causes and put in place improved measures to prevent their reoccurrence.

In summary, while there are areas for improvement, the Australian offshore industry has generally done well in continuing to improve safety and environmental management performance over recent years. This improvement has occurred despite pricing and cost pressures which have led to a drop in performance in some other jurisdictions internationally. While the circumstances in Australia have some parallels with other countries, there are notable differences, particularly the expansion of the LNG industry, which mean that we're dealing with a different risk profile and one that continues to change. The challenge moving forward is to remain vigilant, even for subtle signs that safety and environmental management performance is dropping.



**Stuart Smith**  
CEO - NOPSEMA





# Highlights



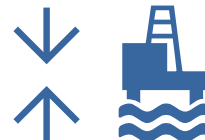
## Total offshore hours worked

12.8 million hours, an increase from 9.7 million in 2016.

In 2017, 75% of hours worked occurred on fixed facilities and 25% on mobile facilities.

## Facilities

19 mobile facilities, a decrease from 20 in 2016.  
137 fixed facilities, an increase from 129 in 2016.



## Submissions to NOPSEMA

194 submissions of key permitting documents were made by duty holders to NOPSEMA. These submissions included:

- 109 safety cases and DSMs
- 40 WOMPs
- 41 environment plans and OPPs
- 4 PSZ applications



For details of the other assessments submitted to NOPSEMA refer to Appendix 5.

## Fatalities & major injuries

No fatalities.

4 major injuries, an increase from 0 in 2016.



## Injuries

52 injuries, a decrease from 53 in 2016.



## Accidents

10 accidents, an increase from 4 in 2016.



## Dangerous occurrences

293 dangerous occurrences, which is the lowest number since 2007.



## Enforcement actions

53 enforcement actions were issued to 22 duty holders in 2017.

## Complaints

8 complaints were received by NOPSEMA in 2017 an increase from 2 in 2016.



## Hydrocarbon releases

29 in 2017, an increase from 25 in 2016.



## Environmental reportable incidents

12 in 2017, an increase from 8 in 2016.



## Inspections

145 inspections were undertaken in 2017, an increase on the 143 inspections in 2016. Inspections in 2017 included:

- 93 occupational health and safety
- 8 well integrity
- 44 environmental management



# Introduction

This report provides information regarding NOPSEMA activities and the activities of the offshore petroleum industry in Commonwealth waters and designated coastal waters where regulatory functions have been conferred to NOPSEMA.

The report also provides a high level summary of:

- submissions received and assessed by NOPSEMA
- industry activities and incidents
- NOPSEMA's compliance and enforcement activities.

NOPSEMA uses intelligence gathered through fulfilment of its regulatory functions to inform the assessment of submissions. For example, information gained from NOPSEMA inspections and investigations may be used to inform an assessment. Similarly, the outcomes of assessment may contribute to the development of NOPSEMA's ongoing inspections of duty holder's compliance with the regulations. For more information about assessments and regulatory documents, see the 'Safety', 'Well integrity' and 'Environmental management' pages at [nopsema.gov.au](http://nopsema.gov.au).

## Data quality

NOPSEMA has made every endeavour to ensure the data included in this report is accurate at the time of publication. Both the subjective nature of qualitative data and legislative amendments may have influenced the results. Data may vary as further information becomes available and any significant variations are noted accordingly within the document. Both numbers and rates are variously discussed throughout this report to provide clarity. 'Rates per million hours worked' is an industry standard, and is calculated by dividing the total number against the total reported hours worked offshore and standardising to one million hours. Applying this standard allows better comparison between operators and facilities and over time allows for the identification of trends.

Percentages are used in selected charts and data tables to assist with comparisons over time and to highlight proportions. Totals may not always equal 100% due to rounding (decimal points) or because not all categories may be included in the topic under discussion (e.g. often only the top five or six categories of interest are discussed to maintain brevity). Brief accompanying text is provided for charts and tables to assist in conveying the statistical information presented in this report. NOPSEMA cautions against extrapolation of the data.

## The Regulator magazine

The Regulator is NOPSEMA's quarterly magazine. It is intended to keep stakeholders informed of NOPSEMA's activities and priorities, relevant legislative reform, and emerging industry issues. To be notified of the magazine's online publication subscribe at the 'Publications' page at [nopsema.gov.au](http://nopsema.gov.au) or to request hard copies submit a request form at the 'Publications' page at [nopsema.gov.au](http://nopsema.gov.au).

## More publications

NOPSEMA publishes its corporate plan, annual report, industry performance data, guidance on NOPSEMA's approach to administering the legislation, safety alerts and other publications and reports at [nopsema.gov.au](http://nopsema.gov.au).

# Introduction (Cont'd)

## Background – NOPSEMA

NOPSEMA is Australia's independent regulator of health and safety, structural and well integrity and environmental management for the offshore petroleum and greenhouse gas storage industries. NOPSEMA's role includes:

- working with the industry, workforce, stakeholders and other authorities to ensure the offshore petroleum and greenhouse gas storage industries properly control all health and safety, integrity and environmental risks
- independently administering offshore petroleum safety, well integrity and environmental management legislation
- promoting a legislative framework that encourages continuous improvement of health and safety, well integrity and environmental performance of the offshore petroleum and greenhouse gas storage industries
- developing its people, processes and systems to deliver efficient and effective regulation.

### Our vision

Safe and environmentally responsible Australian offshore petroleum and greenhouse gas storage industries.

### Our mission

Independently and professionally regulate offshore safety, well integrity and environmental management.

### Our values

**Professionalism** – we will be accountable, consistent, reasonable and act in accordance with the law.

**Ethics** – we will demonstrate respect and integrity in all we do.

**Impartiality** – we will make our decisions on the merits of the circumstances.

**Leadership** – we will be proactive, inclusive and decisive in our conduct as a pre-eminent regulator.

For more information on NOPSEMA, see the 'About' page at [nopsema.gov.au](http://nopsema.gov.au).



## Our jurisdiction

NOPSEMA's jurisdiction covers all offshore petroleum facilities and activities in Commonwealth waters, as well as designated coastal waters where regulatory functions have been conferred. Jurisdictions where powers to regulate are not conferred remain the responsibility of the relevant state or Northern Territory (NT). Currently, Victoria has conferred occupational health and safety (OHS) and well integrity powers to NOPSEMA.

### jurisdiction for safety, structural and well integrity and environmental management



Figure 1.

*Note: State and Northern Territory coastal waters conform more or less to the Australian continent and associated islands. Commonwealth waters extend seaward from the edge of the three nautical mile limit of designated coastal waters, to the outer extent of the Australian Exclusive Economic Zone at 200 nautical miles.*

# Introduction (Cont'd)

## Duty holders

NOPSEMA refers collectively to the parties with legislated responsibilities under the OPGGS Act as 'duty holders'. Duty holders include:

An operator of a facility:	A titleholder:
The organisation responsible for the day-to-day management and control of a facility and its activities.	The organisation that holds rights conferred by an eligible petroleum title.
Operators are responsible for making safety case submissions under OHS related legislation. <sup>1</sup>	Titleholders are eligible to make submissions under environment management and well operations related legislation.

The OPGGS Act also places duties and responsibilities on other parties such as equipment suppliers, contractors, employers and the workforce.

## Objective based regulation – responsibility rests with operators, titleholders, equipment suppliers, contractors, employers and the workforce (duty holders)

The Australian offshore petroleum and greenhouse gas storage regulatory regime is objective based. Under an objective based regime general duties are imposed on parties to the regime, especially operators, titleholders and their employees. The principle underlying the regime is: the primary responsibility for ensuring health and safety and the protection of the environment lies with those who create risks and those who work with them. That is because these parties have the necessary detailed knowledge, decision-making authority and resources to ensure the management of the risks they create in compliance with the duties imposed by the regime. Objective based regulation:

- ensures that those who create risks are responsible for identifying and managing those risks
- is adaptable, flexible and scalable to the particular circumstances of individual activities and the environments in which they take place
- provides the opportunity for the offshore industry to adopt advances in technology and apply control measures that are best suited to the individual circumstances of the activity
- encourages adoption of best practice management systems and continuous improvement in all aspects of duty holder performance
- is recognised internationally by regulatory authorities, risk management professionals and academics as being the most appropriate regulatory framework for high hazard industries.

<sup>1</sup> Other parties also make submissions under OHS legislation, for example, diving operators (diving safety management system).

## Regulatory assessments

By law, offshore petroleum activities cannot commence before the duty holder has demonstrated to NOPSEMA's satisfaction that the relevant safety, well integrity and environmental management requirements will be appropriately managed. This satisfaction is achieved through NOPSEMA's assessment of duty holders' documented submissions, which must demonstrate that risks to OHS and well integrity will be reduced to as low as reasonably practicable (ALARP), and impacts and risks to the environment will be reduced to ALARP and acceptable levels. The key risk management regulatory documents submitted by duty holders to NOPSEMA are:

- **safety case** – covering an operator's assessment and management of health and safety risks
- **well operations management plan (WOMP)** – covering a titleholder's management of risk to well integrity
- **environment plan** – covering a titleholder's management of impacts and risks to the environment.

NOPSEMA makes regulatory decisions according to the relevant legislation, NOPSEMA's published regulatory policies and management processes. For more information on NOPSEMA's assessment approach, see NOPSEMA's 'Assessment policy' at [nopsema.gov.au](http://nopsema.gov.au).

## Ongoing compliance monitoring

NOPSEMA monitors duty holders' compliance with the duties imposed by the legislation and monitors their ongoing implementation, and compliance with, the relevant safety, well integrity and environmental management regulatory documents. Where non-compliance is identified NOPSEMA will, where appropriate, take enforcement action to ensure a return to compliance.

## Compliance strategy

NOPSEMA's Compliance Strategy is a strategic policy document that outlines the compliance framework and principles applied by NOPSEMA in undertaking its regulatory activities. The strategy aims to ensure that offshore petroleum activities are carried out in a safe and environmentally responsible way by encouraging, monitoring and enforcing compliance with the law.

NOPSEMA's approach to compliance is reflected in its regulatory activities comprising advice and promotion, assessment, inspection, investigation, and enforcement. The Compliance Strategy explains the linkages between these activities and how regulatory intelligence is used to improve safety and environmental outcomes. For more information on NOPSEMA's compliance strategy, see the 'Compliance strategy' page at [nopsema.gov.au](http://nopsema.gov.au).

# 1. Industry activity

NOPSEMA collects data relating to offshore petroleum activity via industry reports and submissions received, supplemented with other information.




**156**  
active  
facilities  
in 2017



Total offshore hours reported from mobile facilities was the lowest since reporting began in 2005



Total offshore hours worked increased by  
**31%** 

There were

**40**

active  
facility  
operators



**2017  
SNAPSHOT**

## Offshore hours

The total number of hours worked offshore in 2017 was 12.8 million hours, a 31% increase on the 9.7 million hours reported in 2016. Hours worked on fixed facilities increased by 44%, from 6.6 million hours in 2016 to 9.6 million hours in 2017. This increase in hours worked on fixed facilities can largely be attributed to the unprecedented level of commissioning activity that occurred during 2017. However, the 3.2 million hours worked on mobile facilities in 2017 was the lowest reported since reporting began in 2005. The reduction in mobile facility hours is the result of the low number of active MODUs and the shorter work programs conducted by vessels in 2017.

### Total offshore hours worked

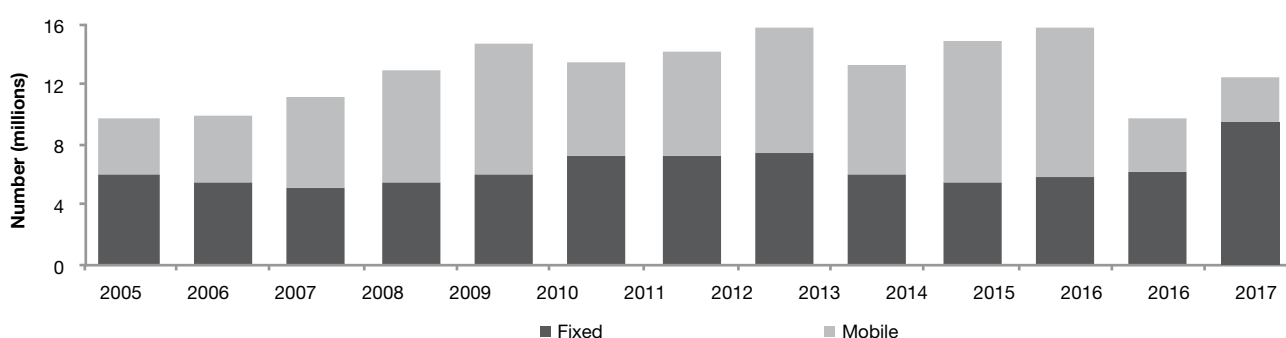
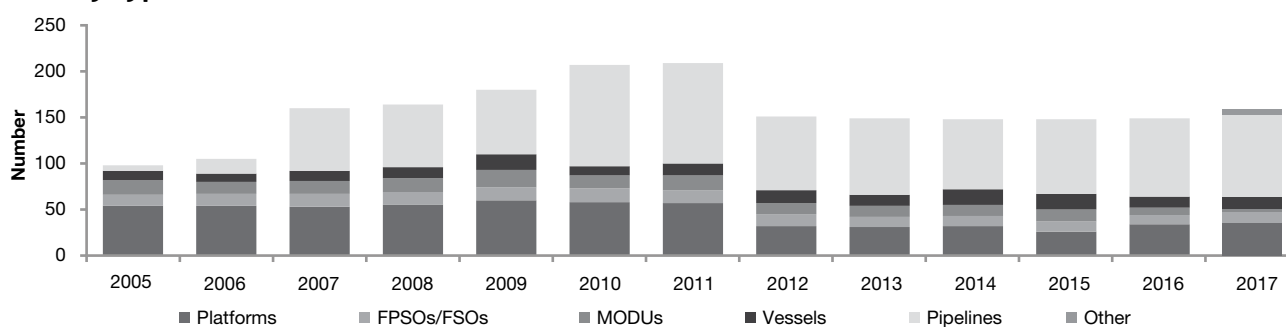


Figure 2.

## Facilities

NOPSEMA groups facilities as fixed or mobile. Fixed includes platforms, pipelines and FPSO/FSOs. Mobile are MODUs and vessels. Since 2012, total facility numbers have remained relatively static, with variation mainly in the number of active<sup>2</sup> mobile facilities. In 2017, there were 40 active<sup>3</sup> facility operators operating 156 active facilities – 137 fixed and 19 mobile. Pipelines remain the most common facility type, with 87 active in 2017.

### Facility types



Note: a number of facilities reverted back to state jurisdiction in 2012

Figure 3.

<sup>2</sup> Platforms and pipelines are classified as 'active' if they are on NOPSEMA's operator register and have an accepted safety case in force; however not all facilities may be actively engaged in hydrocarbon production in a given year.

<sup>3</sup> Facility operators are classified as 'active' based on their submission to NOPSEMA of one or more monthly injury summary reports during a reporting period. Facility operators classified as 'inactive' may be registered with NOPSEMA, but not undertaking offshore petroleum activity in NOPSEMA's jurisdiction in a given period.

# Industry activity (Cont'd)

## Active facility operators (OHS)

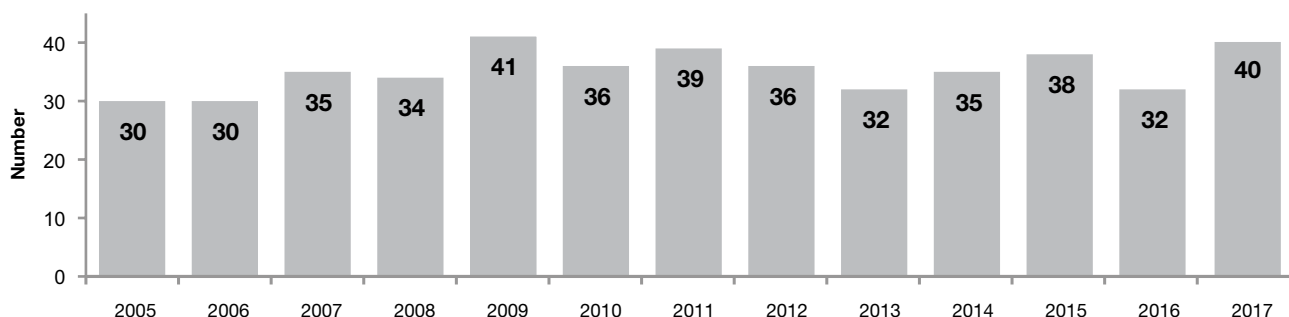


Figure 4.

## Wells

In 2017 there were 919 eligible wells<sup>4</sup> under NOPSEMA's jurisdiction, held by 29 titleholders.

## Titleholders of eligible wells (WI)

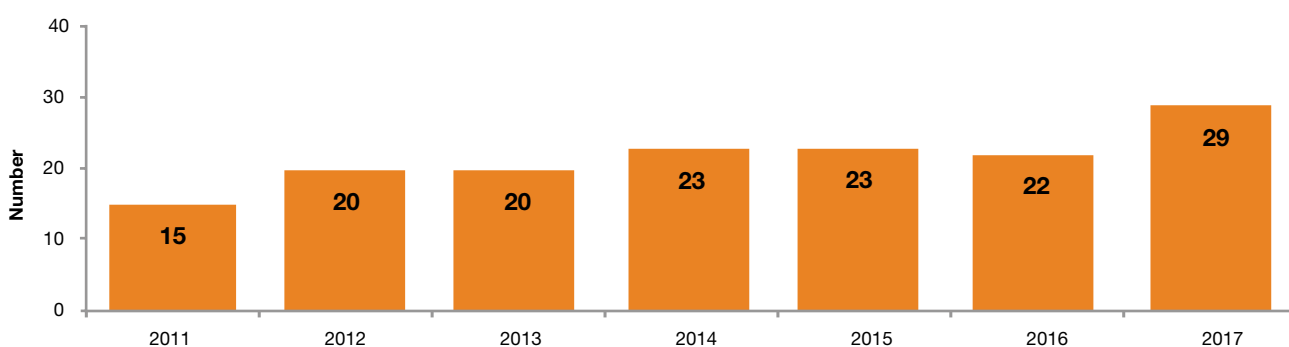


Figure 5.

## Eligible wells (WI)

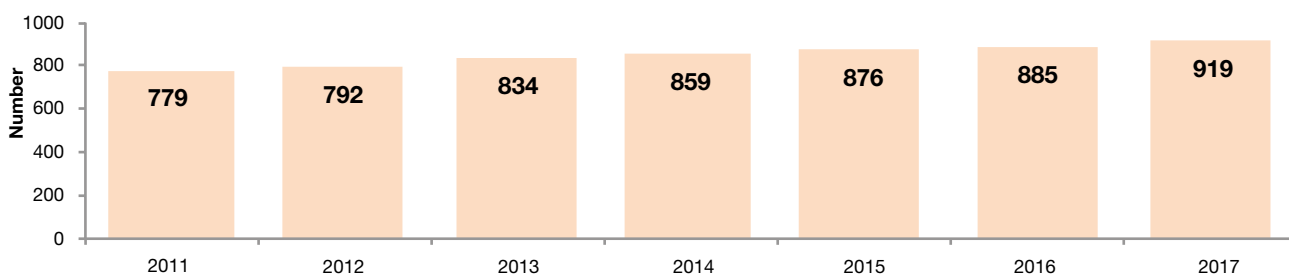


Figure 6

<sup>4</sup> An 'eligible well' is any well that has been drilled within a title area but not permanently abandoned. Eligible wells require continued regulatory oversight and titleholders must ensure that all their eligible wells are covered by an in force WOMP. An abandoned well is a well that has been made permanently safe and requires no further regulatory scrutiny for well integrity scrutiny (but may have ongoing environmental management obligations).



# ACTIVITY MAP - 2017



**Fixed facilities**



**Seismic surveys**



**Eligible wells**



## Facility types

### Fixed facilities

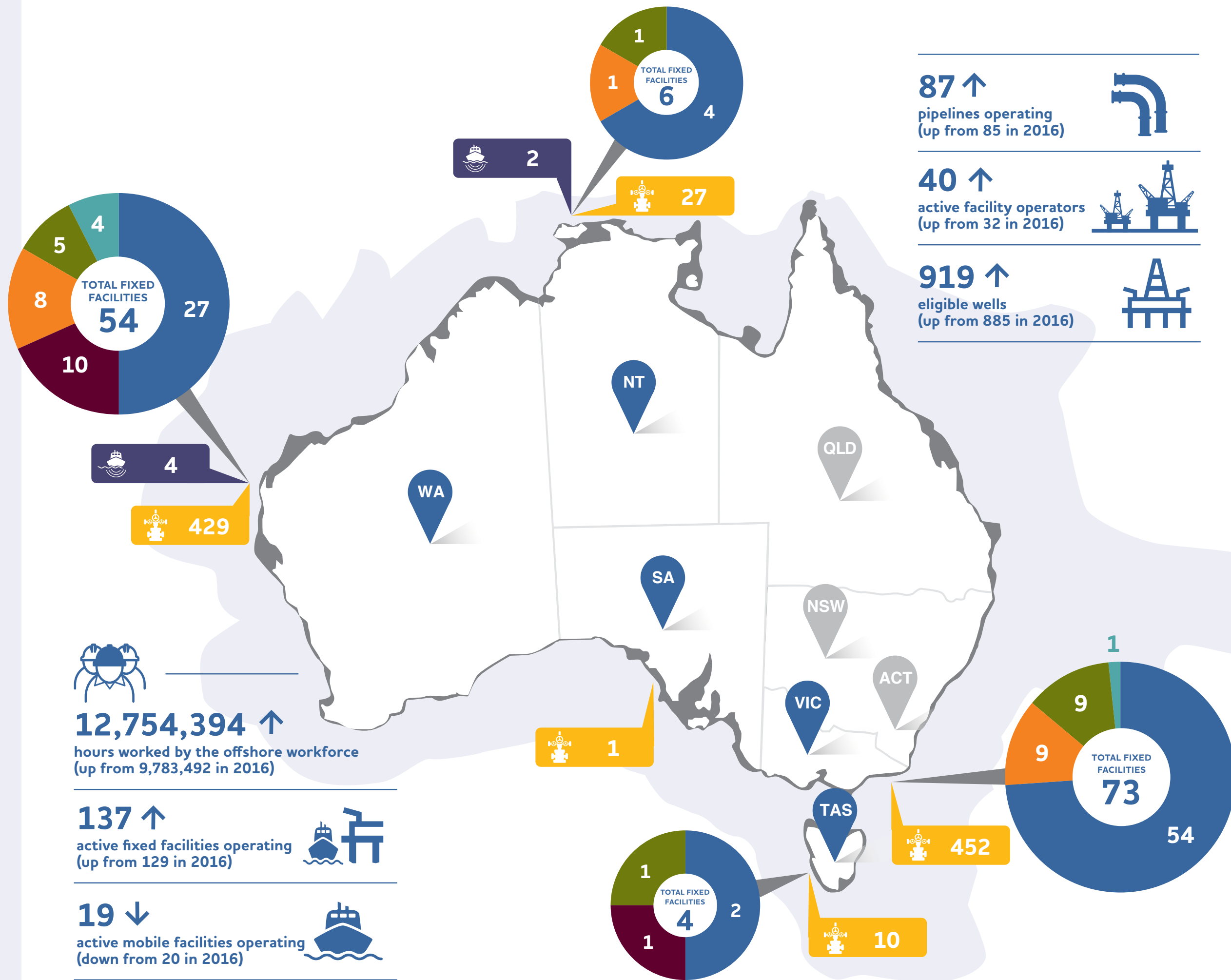
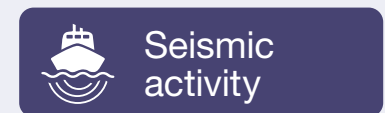


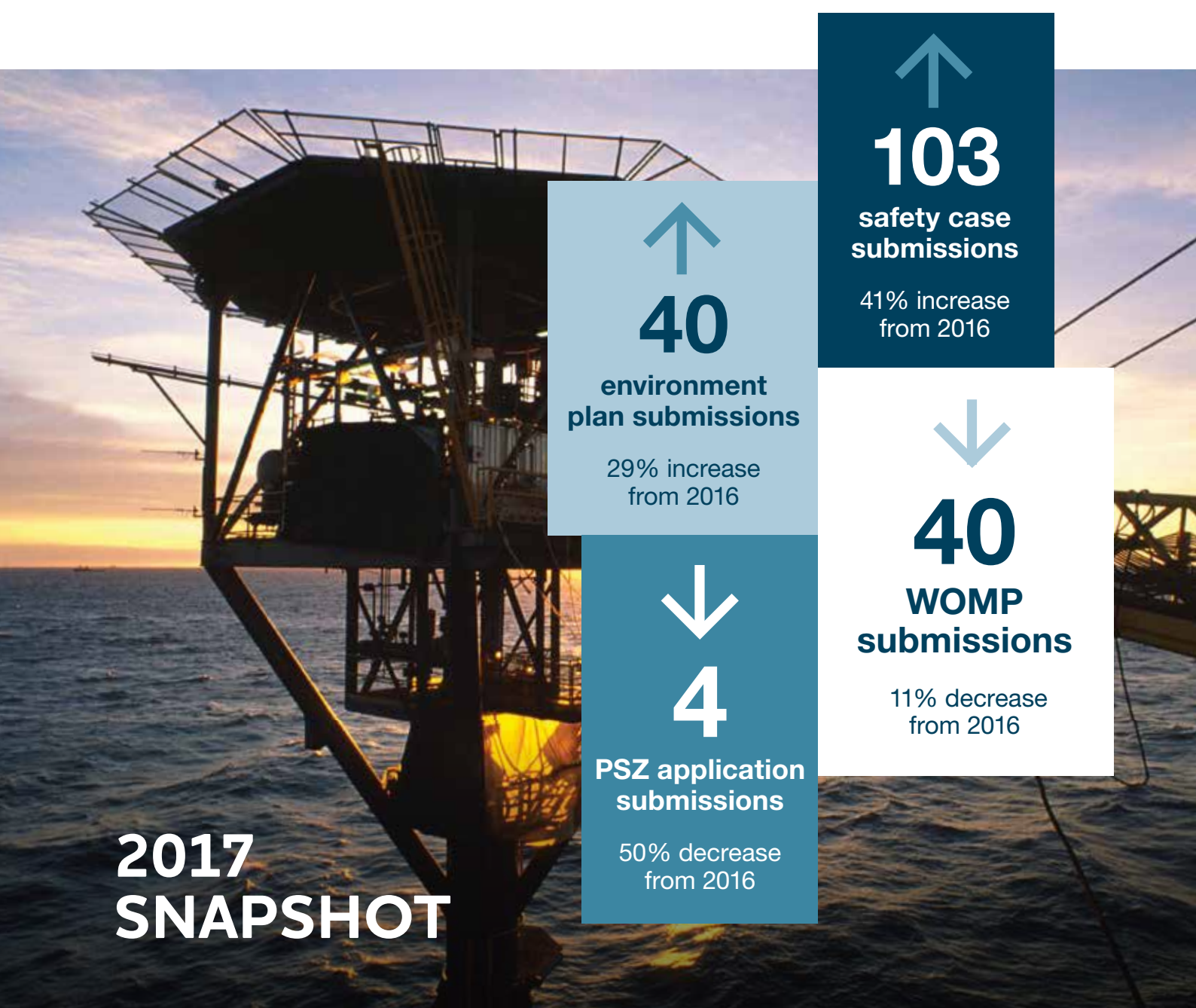
Figure 7.

Note: This map does not include mobile facilities such as MODUs and vessels undertaking petroleum activity.

Note: there was no greenhouse gas activity in NOPSEMA's jurisdiction in 2017.

## 2. Submissions and assessments

NOPSEMA's dedicated assessment teams, staffed by highly trained and qualified technical experts, apply robust, thorough and consistent processes to all duty holders and assessments to ensure the protection of Australia's offshore workforce and environment. Under NOPSEMA's jurisdiction, no petroleum activity can commence without NOPSEMA first 'accepting' the regulatory submission relating to the facility, well activity or petroleum activity.



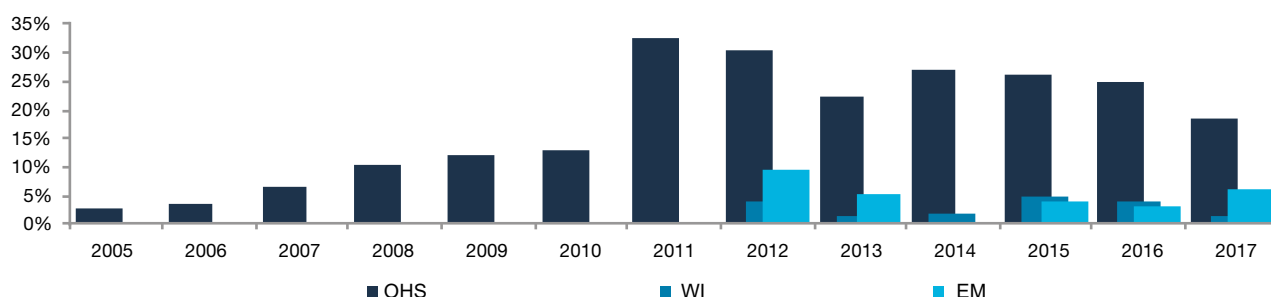
## Submissions and assessments

In 2017 NOPSEMA received 109 occupational health and safety submissions, 40 well integrity submissions, 41 environmental management submissions and 4 PSZ submissions. The occupational health and safety, well integrity and environmental management regulations administered by NOPSEMA include specific acceptance criteria which must be satisfied before NOPSEMA accepts a submission. For example, the criteria for acceptance of an environment plan require that the plan demonstrates that the environmental impacts and risks of the activity will be reduced to ALARP and acceptable. In 2017 NOPSEMA accepted 87 safety cases, 44 WOMPs, 31 environment plans and 4 PSZ applications. It should be noted that some acceptances related to plans submitted in previous years.

### Assessments not accepted

Regulatory submissions that do not meet the relevant regulatory requirements are not accepted by NOPSEMA. If a submission is not accepted then the operation or activity to which it relates cannot proceed. NOPSEMA will provide the duty holder with a refusal/rejection letter that contains information on which acceptance criteria were not met. Under the legislation, duty holders are entitled to make a new submission for the same facility/activity. In such circumstances, the assessment process re-commences from the beginning.

### Assessments not accepted



Note: Includes 'rejected', 'refused to accept', 'not agreed', 'not acceptable', 'not satisfied', 'declined'.  
OHS assessments include safety cases and diving safety management systems.

Figure 8.

### Assessment timeframes

NOPSEMA is required to notify outcomes of each assessment within the legislative timeframes. The overall time taken for NOPSEMA to assess submissions is also dependant on the duty holder. For example, operators providing timely responses to requests for further written information and validation statements; or the time taken by titleholders to respond to opportunities for modification and resubmission, or responses to requests for further written information.

### Assessments notified within legislated timeframes

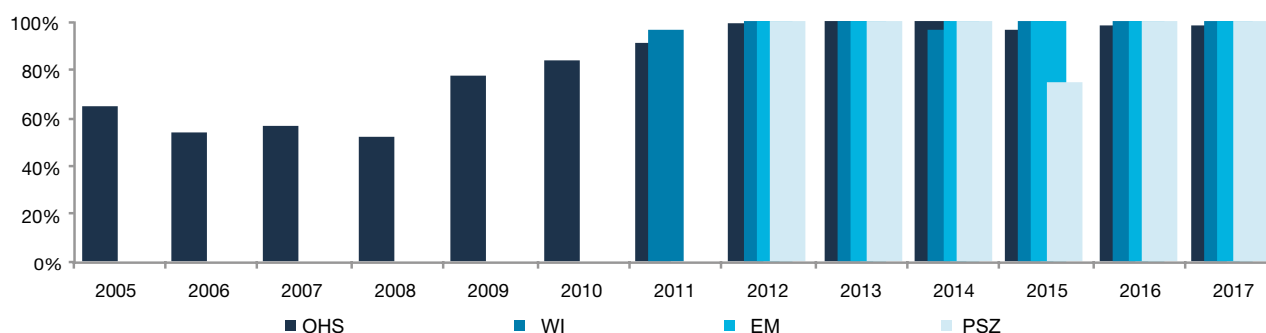
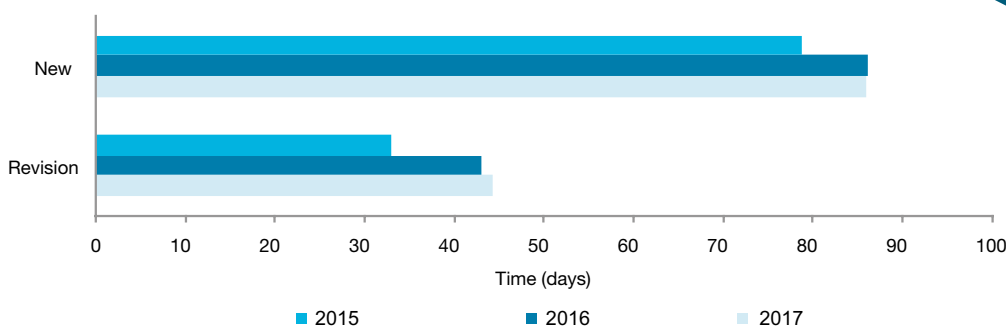


Figure 9

# Submissions and assessments (Cont'd)

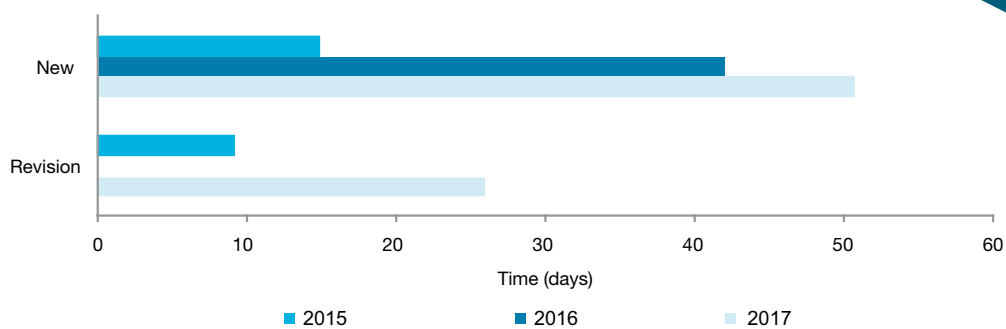
Average safety case assessment timeframes



The average time for completion for new safety case assessments in 2017 was 86 days. The average time for revisions was 44 days.

Figure 10.

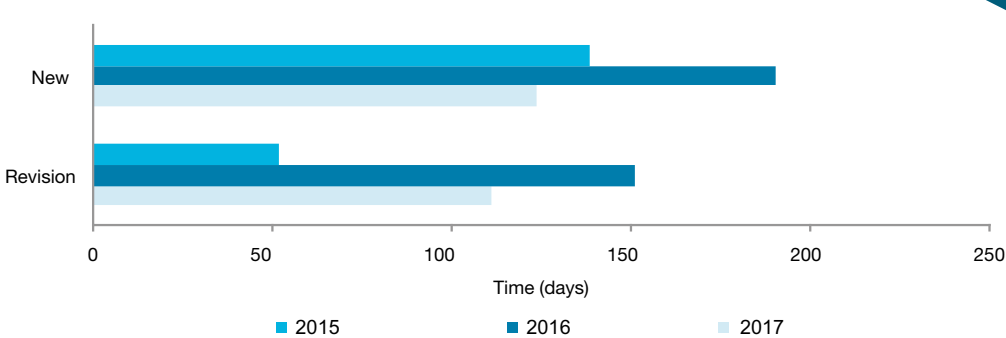
Average WOMP assessment timeframes



The average time for completion for new WOMP assessments in 2017 was 51 days. The average time for variations was 26 days.

Figure 11.

Average environment plan assessment times



The average time for completion for new environment plan assessments in 2017 was 119 days. The average time for revisions was 111 days.

Figure 12.







### 3. Incident notifications and reporting

NOPSEMA receives notifications from industry related to a variety of different regulatory matters. Notifications most commonly relate to reportable incidents that are described under the OPGGS Act and its associated regulations. A reportable incident is taken to mean an OHS accident or dangerous occurrence, an environmental management reportable incident or a well integrity reportable incident. It is an offence of strict liability not to notify and report to NOPSEMA.

## 2017 SNAPSHOT



**29**

hydrocarbon  
releases, an  
increase from  
25 in 2016



**No**  
fatalities

**10**  
accidents,  
an increase  
from 4 in 2016

**291**  
dangerous  
occurrences,  
the lowest number  
since 2007.



## Notification and reporting

Duty holders are required to notify NOPSEMA of offshore petroleum incidents as per the legislation. Full reports for notifiable incidents are required. Additionally, duty holders must provide monthly summary reports as per the legislation. For operators of facilities (OHS) these comprise death and injury data, and for environmental management titleholders these comprise recordable environmental incidents.

In 2017 there were 342 reportable incidents covering safety, environmental management and well integrity reports. Each one of these incidents requires the duty holder to make a report to NOPSEMA. NOPSEMA reviews and evaluates every one of these reportable incidents and applies a triage methodology to determine the next course of action for each incident. NOPSEMA also receives complaints and investigates these, for more information see Chapter 5.

There were no fatalities in 2017. There were four major injuries – ending a record 15 consecutive months without a single major injury occurring offshore. There were also six lost time injuries greater than 3 days reported. The number of reported dangerous occurrences decreased by 3% from the 303 reported in 2016 to 293 in 2017 – an encouraging result given that total hours worked offshore were 31% higher in 2017 than in 2016. The vast majority of these reported dangerous occurrences were attributed to activating an emergency response to false alarms or inadvertent manual activation due to human activities.

NOPSEMA actively monitors with industry and the workforce to ensure that corrective actions are appropriately targeted and will hold duty holders to account for any identified breaches of their duties or responsibilities, (see Chapter 7, ‘Investigations and enforcements’).

Notifiable incidents	Recordable incidents
These incident types must be notified as soon as practicable to NOPSEMA (according to legislative timeframes) and comprise:	These incident types must be reported to NOPSEMA on a monthly basis.

OHS Incidents		EM Incidents		OHS Injuries
Accidents	Dangerous occurrences	EM Reportable	EM Recordable	Injuries
Incidents where an offshore worker is killed, suffers a serious injury, suffers an injury or illness requiring three or more days off work.	Incidents that did not, but could reasonably have, caused an accident.	Incidents relating to an offshore petroleum activity that have caused, or have the potential to cause, moderate to significant environmental damage.	Refer to breaches of an environmental performance outcome(s) or standard(s) contained in the environment plan that applies to an offshore petroleum activity.	Injuries requiring treatment other than first aid e.g. serious injuries, lost time injuries, alternative duties injuries and medical treatment injuries.

# Incident notifications and reporting (Cont'd)

## Incident root causes

As part of the legislative requirement for operators to report accidents and dangerous occurrences to NOPSEMA, operators must provide a root cause analysis as part of each report. This contributes to a better understanding of the factors influencing offshore incidents and informs improvements to design, training, systems, processes and equipment in support of better health and safety outcomes.

### 3.1 Accidents – 10 in 2017

The category 'accidents' includes incidents where an offshore worker is killed, suffers a serious injury or suffers an injury/illness requiring three or more days off work. There were 10 accidents reported in 2017, an increase on the record low four reported in 2016. However, since peaking in 2008 the number of accidents has been trending downwards and there has not been a fatality at an offshore facility since 2012.

#### Accidents

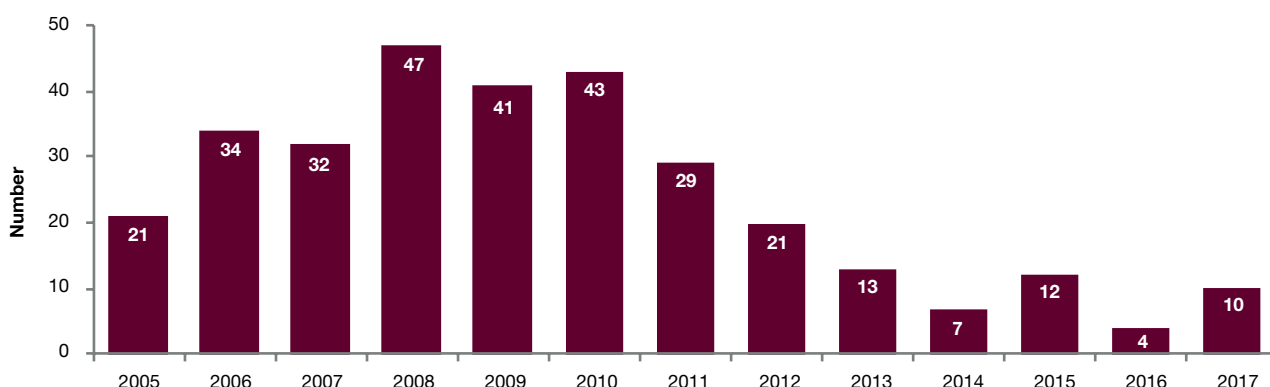


Figure 13.

## Accident basic causes

In 2017, the three most common accident basic causes were: design (29%), work direction (24%) and procedures (18%). In contrast, the main causes for accidents in 2016 were attributed to lack of supervision and human error.

#### Accidents basic causes (OHS)

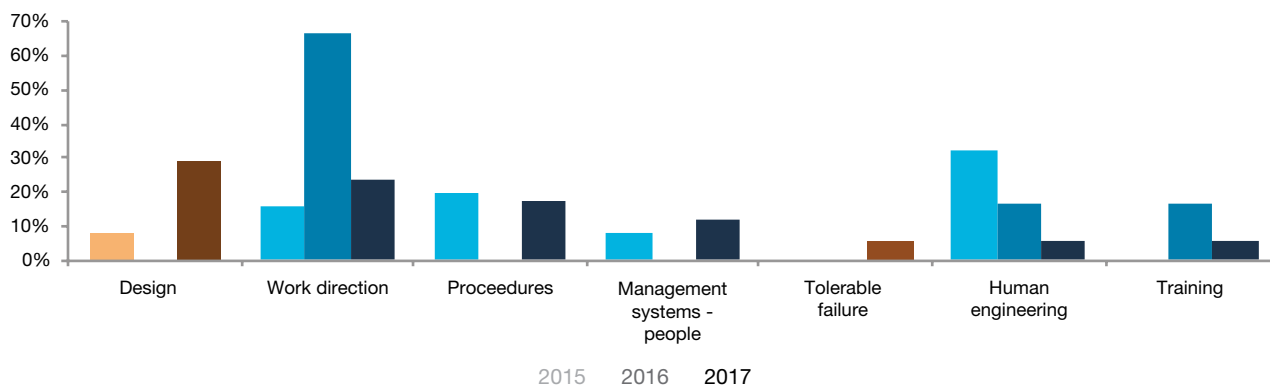


Figure 14.

Note: blue = human performance difficulties; orange = equipment difficulties.

### 3.2 Dangerous occurrences – 293 in 2017

Dangerous occurrences are incidents that did not, but could reasonably have, caused an accident. They are often indicators of underlying safety issues and it is crucial that operators identify and remedy the causes of dangerous occurrences. The 293 dangerous occurrences reported to NOPSEMA in 2017 was the lowest number reported in the past 10 years.

#### Annual number of dangerous occurrences reported to NOPSEMA

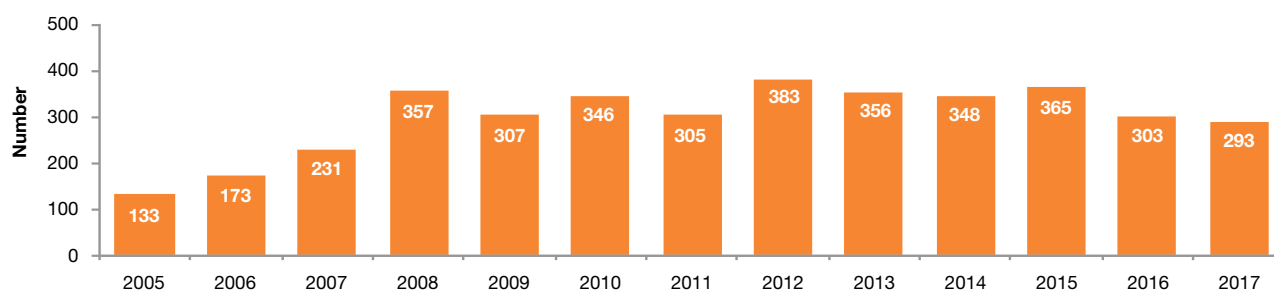


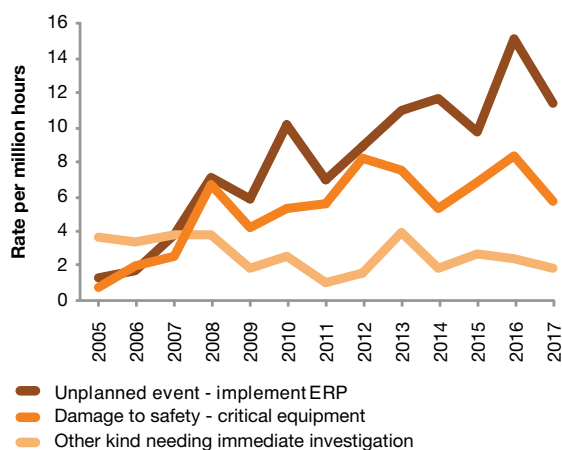
Figure 15.

### Dangerous occurrence rates

The number of dangerous occurrences decreased in 2017, despite the 31% increase in hours worked offshore compared to 2016. This decrease in the number of dangerous occurrences and hours worked has resulted in lower dangerous occurrence rates across all categories in 2017 compared to 2016. In particular, the rates for fires, collisions and potential injuries are amongst the lowest since 2005. Reduction in the rates of these types of dangerous occurrences is positive as these incidents can, or have the potential to, cause harm to workers.

Implementation of emergency response plans remain the most common dangerous occurrence. The vast majority of incidents that required the implementation of emergency response plans were the result of false alarms or inadvertent manual call point activation due to human activities. The rate for damage to safety-critical equipment also decreased. This reduction is important as safety-critical equipment is any component part of structure, equipment, plant or system whose failure could cause a major accident event.

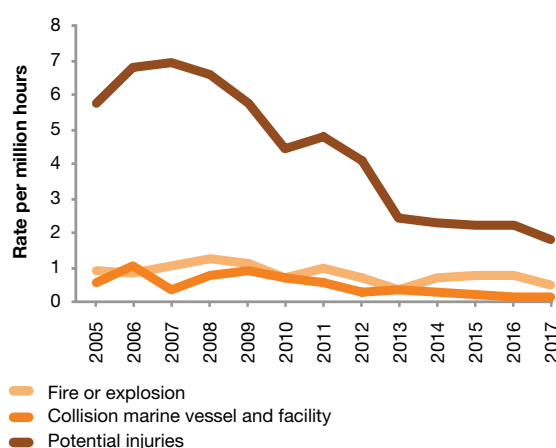
#### Rates – unplanned events, damage to safety critical equipment, other



Note: SCE refers to safety-critical equipment

Figure 16.

#### Rates – fires, collisions, potential injuries



Note: Potential injuries refers to incidents that were reported under the categories 'Could have caused death or serious injury' and 'Could have caused incapacitation >= 3 days LTI'

Figure 17.

# Incident notifications and reporting (Cont'd)

## Dangerous occurrence basic causes

The top three most common basic causes for dangerous occurrences reported to NOPSEMA in 2017 were: design (20%), tolerable failure (15%) and preventative maintenance (14%). This is largely consistent with the main basic causes for dangerous occurrences in 2016, which were a mix of human performance and equipment difficulties.

### Dangerous occurrences basic causes (OHS)

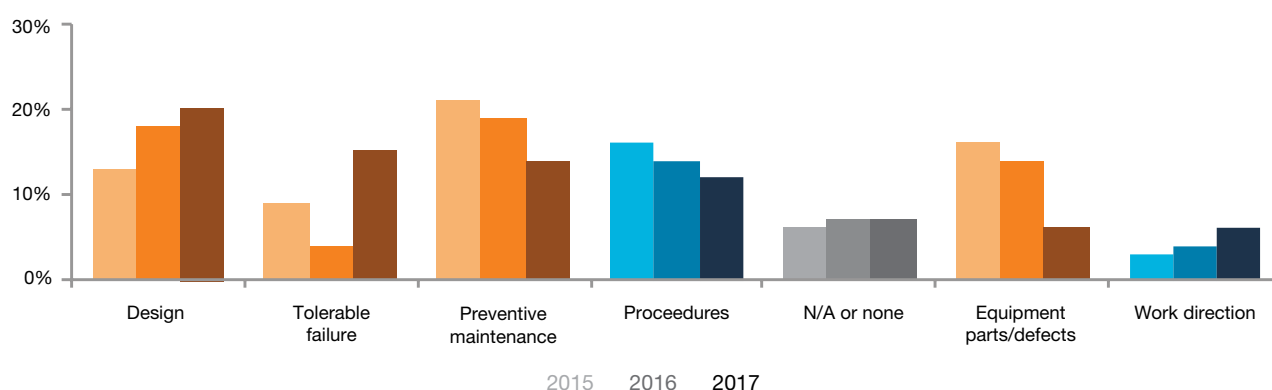


Figure 18.

## 3.3 Uncontrolled hydrocarbon releases – 29 in 2017

Uncontrolled hydrocarbon releases are unplanned releases of oil and gas. They are a key hazard management issue for offshore petroleum operations and the industry must always ensure comprehensive measures are in place to prevent, detect, control and, when they occur, mitigate such releases. NOPSEMA requires that such measures are in place prior to the commencement of petroleum operations and continuously monitors operator and titleholder compliance with these measures. Where it is identified that these measures are not being maintained NOPSEMA may initiate enforcement action to ensure a return to best practice compliance.

### Uncontrolled hydrocarbon releases

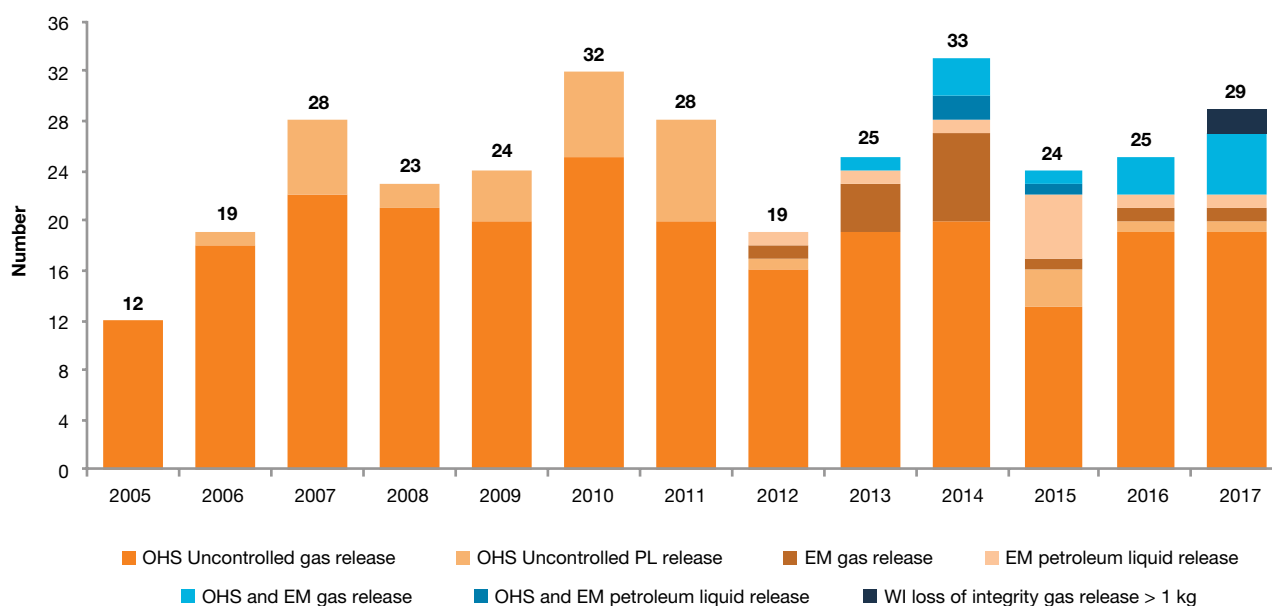


Figure 19.

In the first half of 2017, the number of uncontrolled hydrocarbon gas releases noticeably increased compared to the corresponding period in 2016. The majority of these releases were in the lower release category (>1-300kg) and were attributed to a single titleholder. NOPSEMA Inspectors took enforcement action<sup>5</sup> against the titleholder to ensure appropriate measures were taken to rectify the most serious issues. In the months following NOPSEMA's intervention, the titleholder's performance markedly improved. For the remainder of 2017, the number of reported uncontrolled gas releases stabilised, with four reported in the last quarter of the year. Gas releases continue to be a concern for NOPSEMA due to their potential to cause a major accident event and/or harm persons.

There has not been an individual liquid hydrocarbon release greater than 12,500 litres since the Montara oil spill in 2009. The total volume of petroleum liquid released across the industry since 2010 is 64,014 litres, with many of the releases being contained on the facility or vessel. To put this volume of releases in perspective, the volume of an olympic sized swimming pool is 2.5 million litres; and the Montara oil spill resulted in the release of between 4.5 to 34 million litres of hydrocarbon liquid. However, any release is a concern due to the risk of ignition and potentially serious OHS and environmental consequences. NOPSEMA will continue to remain vigilant on this issue and ensure that industry is doing all it can to reduce the number of uncontrolled hydrocarbon releases.

The top three most common root causes for uncontrolled hydrocarbon releases identified by operators in 2017 were: preventative maintenance (36%), design (33%) and management systems – people (12%). All root causes relate to areas where industry can improve. NOPSEMA will continue to encourage continuous performance of industry preventative maintenance practices and management systems to reduce the occurrence of hydrocarbon releases.

### OHS hydrocarbon releases - basic causes

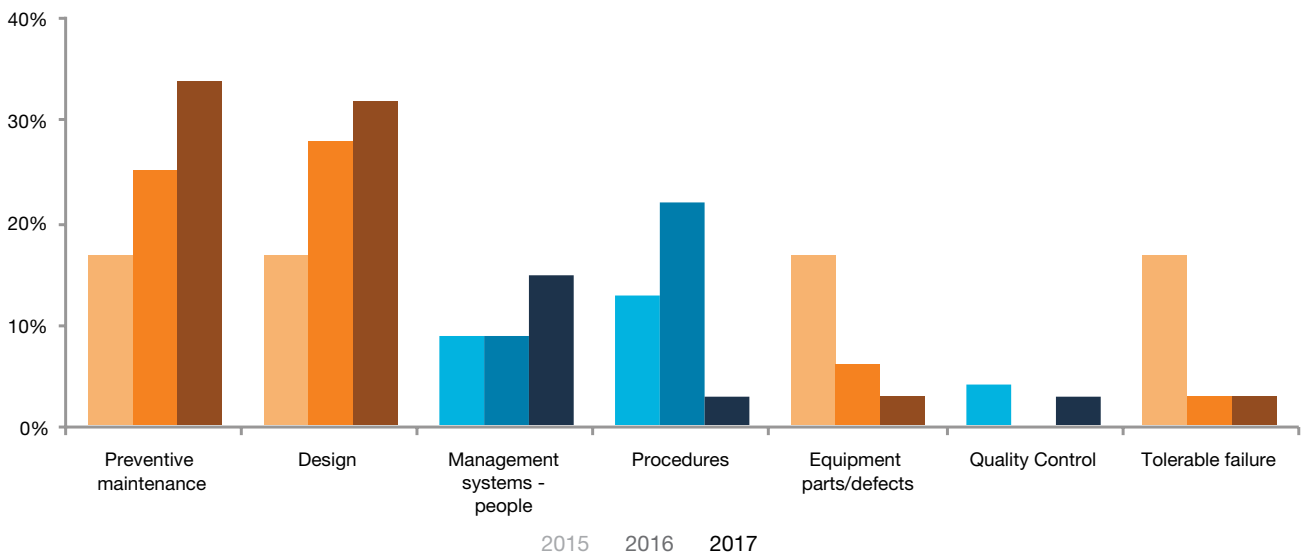


Figure 20.

<sup>5</sup> See OHS Improvement Notices 644-655 and Environmental Improvement Notice 638 at the 'Published notices' page at [nopsema.gov.au](http://nopsema.gov.au).



# Incident notifications and reporting (Cont'd)

## 3.4 Environmental reportable incidents – 12 in 2017

The number of environmental reportable incidents increased from eight in 2016 to 12 in 2017. Seven of these incidents involved the release of either hydrocarbon vapour or petroleum liquid. All seven of these hydrocarbon incidents are included in the uncontrolled hydrocarbon statistics on the previous page of this report. Of the other five environmental reportable incidents in 2017: three were minor chemical releases, one was a fauna incident and one incident involving a potential loss of barriers or controls (categorised as 'other' in figure 21 below). Overall, the number of environmental reportable incidents continues to be low and, most importantly, these incidents have not resulted in significant environmental consequences.

### Environmental reportable incidents

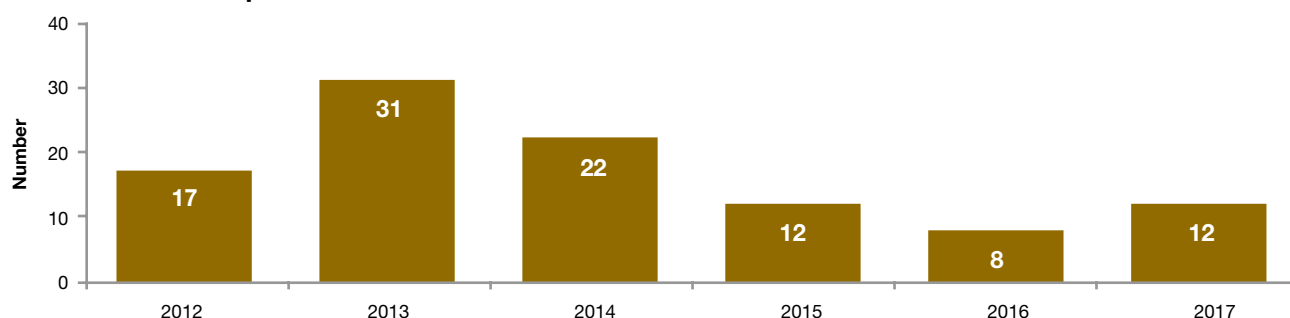


Figure 21.

In 2017, all environmental reportable incidents occurred during operations-related petroleum activities. This is likely reflective of the higher proportion of activity that occurred on fixed platforms compared to itinerant activities such as seismic or drilling exploration.

### Reportable environmental incidents

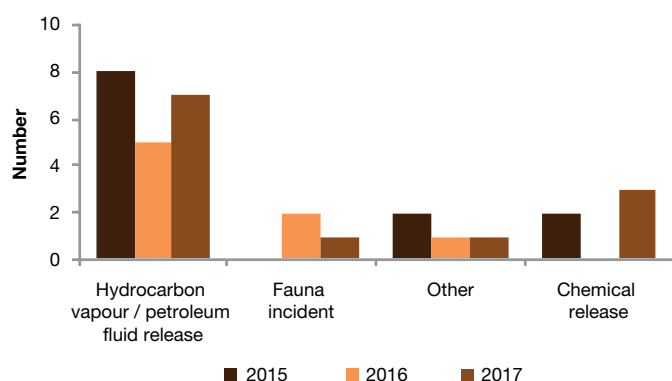


Figure 22.

### Reportable environmental incidents – by activity type

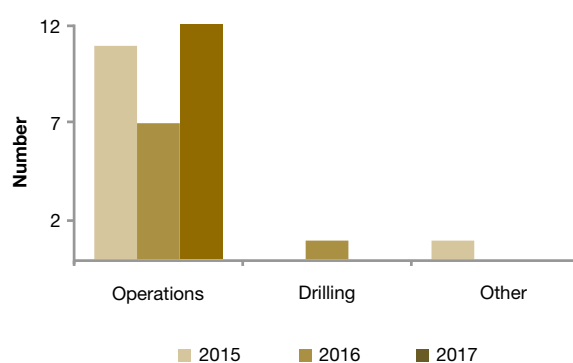


Figure 23.

## 4. Fatalities and injuries

NOPSEMA compiles injury data from mandatory monthly reports submitted by operators to NOPSEMA. By law, the injury summary reports cover all fatalities, injuries, illness and disease suffered by workers offshore requiring medical treatment or time off regular duties. While injury rates are typically not an indicator of major accident events, the lowering of injury rates since 2008 should still be commended as this represents actual harm avoided and demonstrate continuing efforts by operators in keeping the workforce injury free.



**No**  
offshore  
fatalities

**4 major  
injuries,**  
an increase  
from 0 in 2016

**52 total  
injuries,**  
the lowest  
number  
on record

**TRC rate 4.07  
per million  
hours worked,**  
a decrease  
from 5.36 per  
million hours  
worked in  
2016



**2017  
SNAPSHOT**

# Fatalities and injuries (Cont'd)

## 4.1 Total recordable cases (TRCs) – 52 in 2017

The 52 total recordable cases (TRCs) in 2017 is the lowest number reported since the inception of NOPSA in 2005. TRCs (commonly referred to as 'total injuries') are calculated by adding the number of fatalities, major injuries, lost time injuries (LTIs), alternative duties injuries (ADIs) and medical treatment injuries (MTIs) reported. There was also a decrease in the TRC rate (which takes into account industry activity levels). In 2017 the TRC rate was 4.07 per million hours worked, a decrease on the 5.36 per million hours worked reported in 2016.

### Total recordable cases

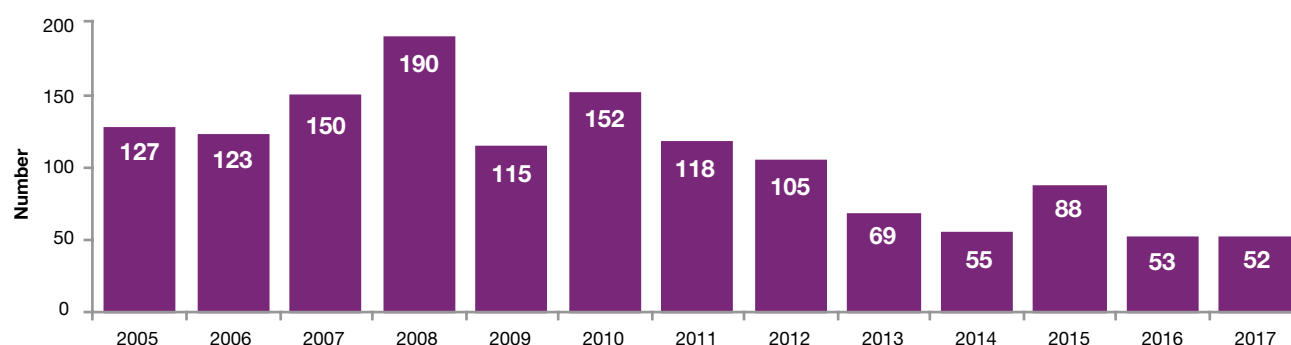


Figure 24.

### TRC rate

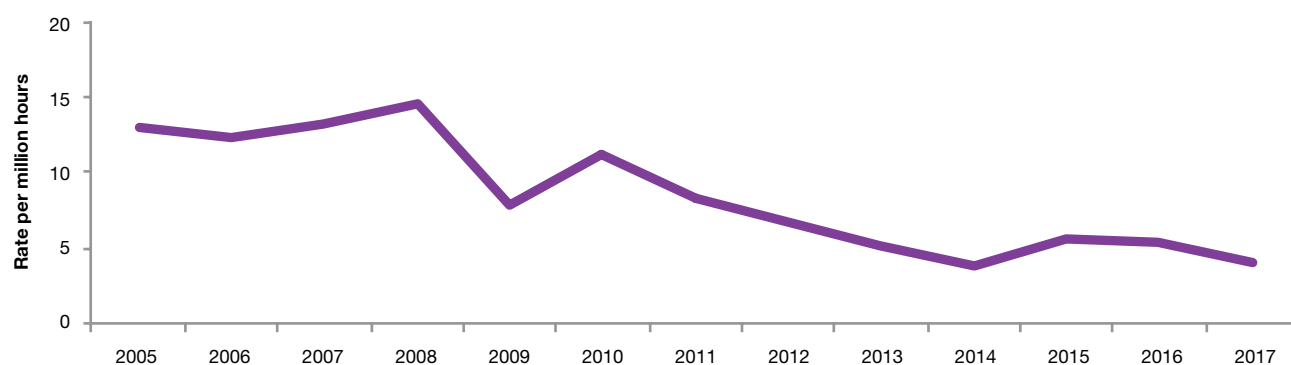


Figure 25.

## Total injury rate – trends by facility type from 2005 to 2017

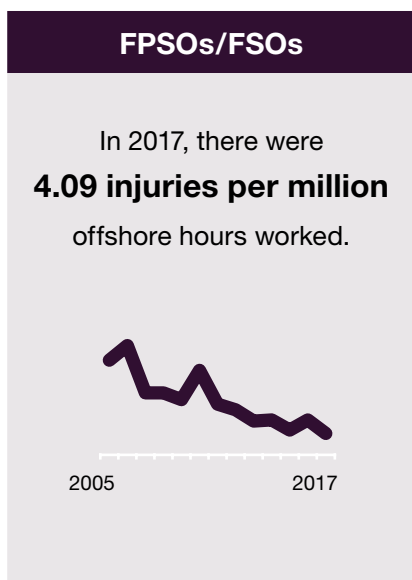


Figure 26.

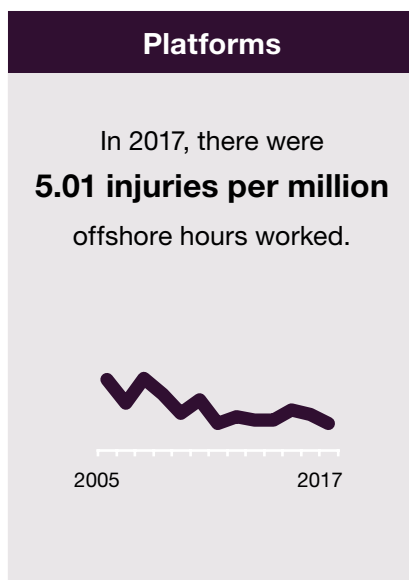


Figure 27.

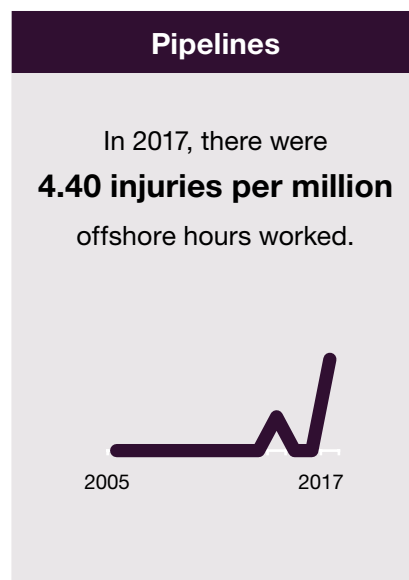


Figure 28.

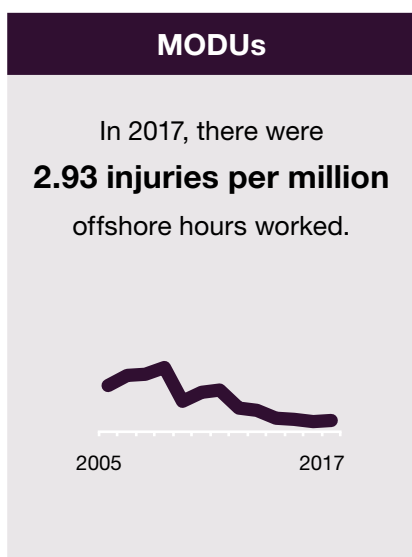


Figure 29.

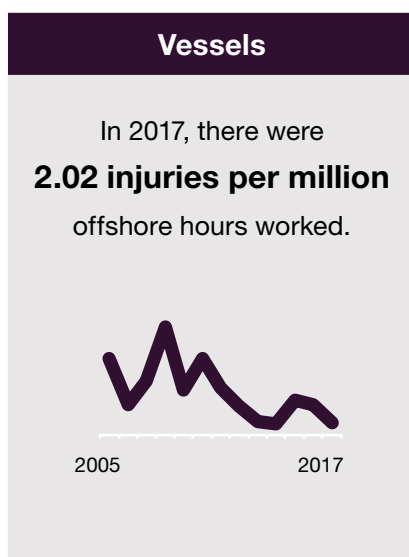


Figure 30.

Pipelines are not normally attended. There was one injury associated with pipeline activities in 2017.

# Fatalities and injuries (Cont'd)

## TRCs – injury groups from 2015 to 2017

The four bar charts below (figures 31-34) show injuries reported to NOPSEMA in 2017 against the type of occurrence classification system (TOOCS) used by Safe Work Australia: nature of injury, location of injury, mechanism of incident and agency of injury.

### Total recordable cases - nature of injury

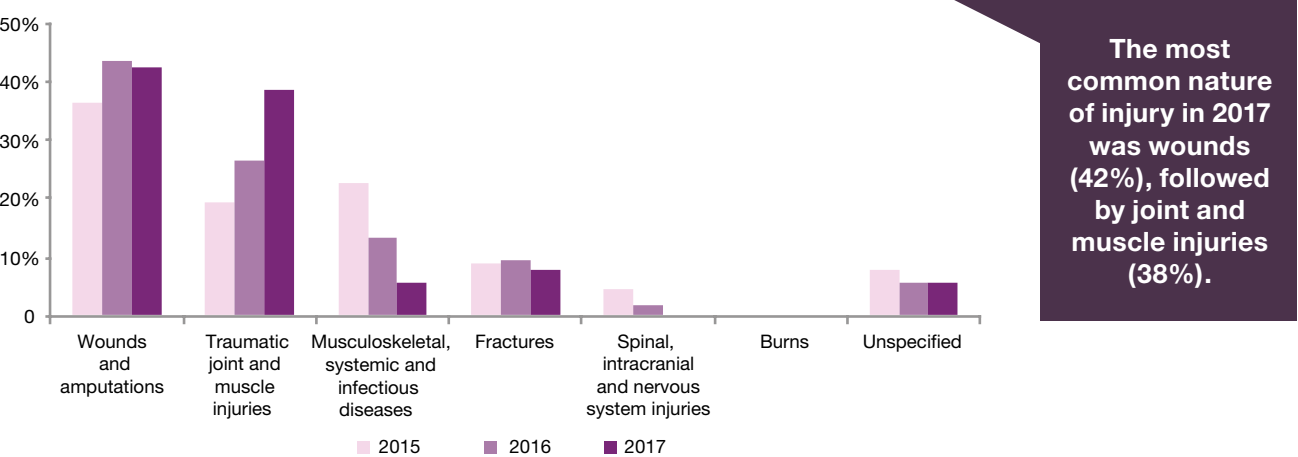


Figure 31.

### Total recordable cases - location of injury

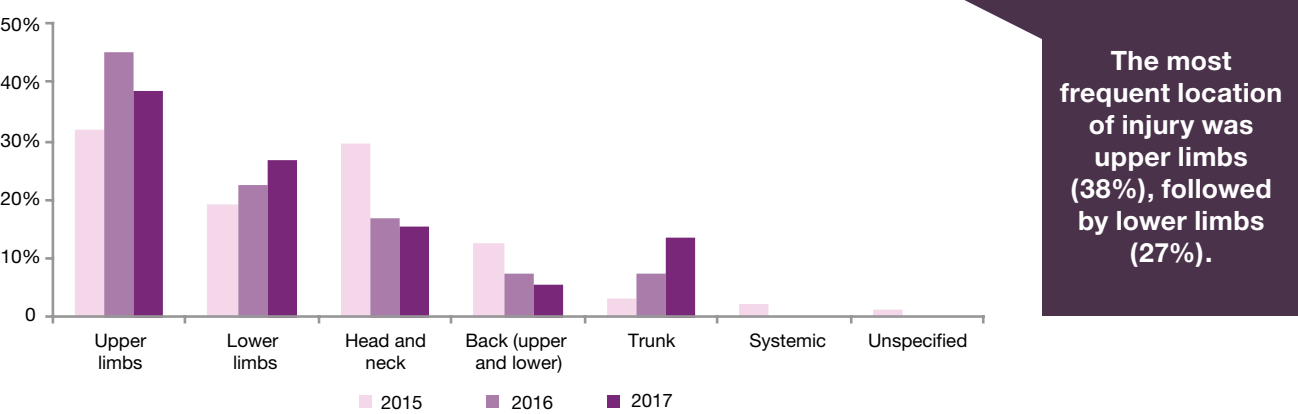
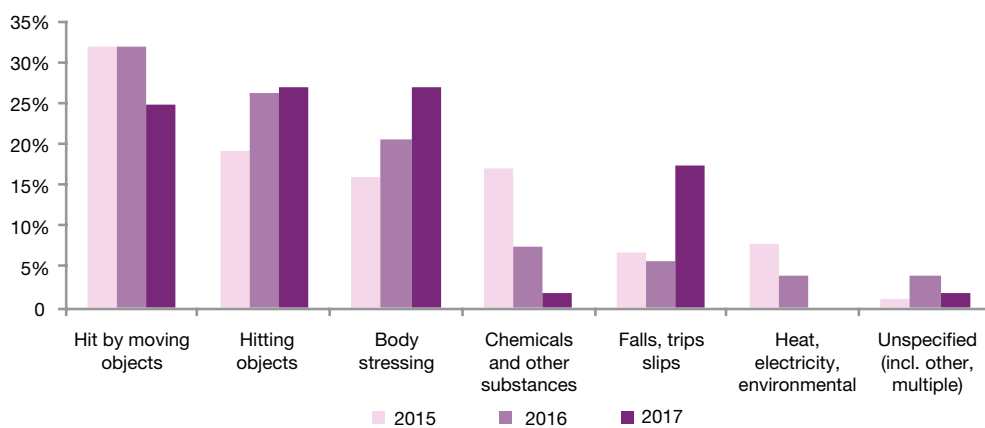


Figure 32.



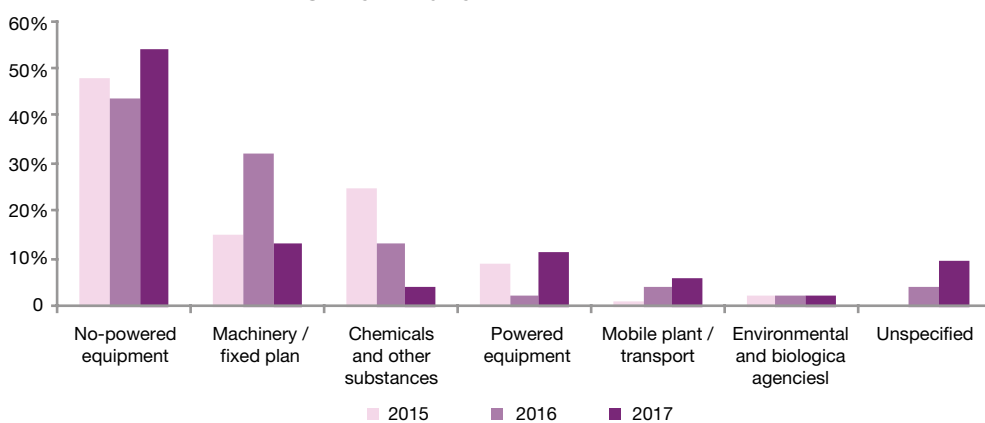
### Total recordable cases - mechanism of incident



The most frequently reported mechanisms of incident in 2017 were body stressing (27%) and hitting objects (27%).

Figure 33.

### Total recordable cases - agency of injury



Non-powered equipment remained the most common agency of injury (54%), followed by machinery/fixed plant (13%).

Figure 34.








# Fatalities and injuries (Cont'd)

## 4.2 Injury groups by injury type – 2017

Serious injuries		Less serious injuries		
4 – major injuries (MIs)	6 – lost time injuries ≥3 days (LTIs ≥3)	1 – lost time injuries <3 days (LTIs <3)	11 – alternative duties injuries (ADIs)	30 – medical treatment injuries (MTIs)
Result in hospitalisation, unconsciousness, fractures etc. <sup>6</sup>	Result in a worker having three or more days off work.	Result in a worker having one or two days off work.	Result in a worker being assigned duties other than normal duties.	Result in a worker requiring medical treatment other than first aid.

The sparklines below indicate injury trends from 2005 to 2017

	Figure 35.	Figure 36.	Figure 37.	Figure 38.	Figure 39.
					
	Increase from 0.00 in 2016 to 0.31 in 2017	Increase from 0.41 to 0.47	Decrease from 0.31 to 0.08	Decrease from 2.45 to 0.86	Increase from 2.25 to 2.35
NATURE	2 fractures (50%) 1 wounds (25%) 1 joint and muscle (25%)	3 joint and muscle (50%) 2 wounds (33%) 1 musculoskeletal (17%)	1 wounds (100%)	8 joint and muscle (73%) 1 wounds (9%) 1 fractures (9%) 1 unspecified (9%)	17 wounds (57%) 8 joint and muscle (27%) 2 musculoskeletal (7%) 2 unspecified (7%) 1 fractures (3%)
LOCATION	3 lower limbs (75%) 1 upper limbs (25%)	4 lower limbs (67%) 1 trunk (17%) 1 upper limbs (17%)	1 head and neck (100%)	4 upper limbs (36%) 2 back (18%) 2 trunk (18%) 2 lower limbs (18%) 1 head and neck (8%)	14 upper limbs (47%) 6 head and neck (20%) 5 lower limbs (17%) 4 trunk (13%) 1 back (3%)
MECHANISM	2 hit by moving objects (50%) 1 hitting objects (25%) 1 falls, trips, slips (25%)	2 body stressing (33%) 2 hit by moving objects (33%) 2 falls, trips slips (33%)	1 hit by moving objects (100%)	6 body stressing (55%) 2 hit by moving objects (18%) 2 falls, trips, slips (18%) 1 hitting objects (9%)	12 hitting objects (40%) 6 hit by moving objects (20%) 6 body stressing (20%) 4 falls, trips, slips (13%) 1 chemicals and other substances (3%) 1 unspecified (3%)
AGENCY	1 mobile plant/transport (25%) 1 powered equipment (25%) 1 non-powered equipment (25%) 1 machinery/fixed plant (25%)	3 non-powered equipment (50%) 2 powered equipment (33%) 1 unspecified (17%)	1 chemical and other substances (100%)	9 non-powered equipment (82%) 2 machinery/fixed plant (18%)	15 non-powered equipment (50%) 4 unspecified (13%) 4 machinery/fixed plant (13%) 3 powered equipment (10%) 2 mobile plant/transport (7%) 1 environmental/biological (3%) 1 chemicals/substances (3%)

6 Refer to glossary for full definition.

## 5. Complaints – 8 in 2017

NOPSEMA receives and investigates complaints about conditions and issues that may affect the occupational health and safety of workers at a facility, or the environmental management of an activity. In 2017 NOPSEMA received eight complaints relating to occupational health and safety. All complaints were followed up by NOPSEMA. All of these complaints were followed up either through inspections or investigations. At the time of publication four of the eight complaints received in 2017 are the subject of an ongoing investigation by NOPSEMA.

While NOPSEMA encourages members of the offshore workforce to first raise any health and safety or environmental management concerns with facility/activity management or health and safety representatives or committees, we understand that, for various reasons, sometimes members of the workforce feel uncomfortable in doing so. NOPSEMA addresses all complaints with respect and confidentiality and takes all possible measures to protect the identity of those who make complaints. Complaints can be notified through NOPSEMA's dedicated incident notification phone line on (08) 6461 7090.

### Complaints against duty holders

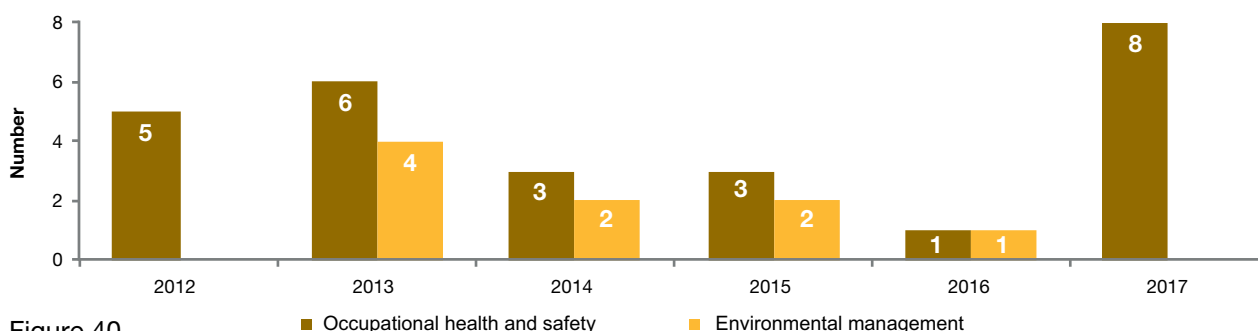


Figure 40.

### Information provided to NOPSEMA – 33 in 2017

In 2012, NOPSEMA introduced a new category of notification into its regulatory management system called, 'Information provided to NOPSEMA'. This category is used when NOPSEMA receives information from stakeholders where, for example, the information does not form the basis of a complaint, the event is not notifiable under the regulations or it is unclear for what purpose the information is being provided. Prior to 2012, some of these notifications were included with complaints data, based on interpretation of the information provided. This is reflected in previously published data where there are a higher number of recorded complaints prior to 2012.

In 2017 NOPSEMA received 33 'information provided to NOPSEMA' notifications. Depending upon the nature of the issue notified these were dealt with through investigation, inclusion as a topic in a subsequent inspection or other actions as appropriate.

### Information provided to NOPSEMA

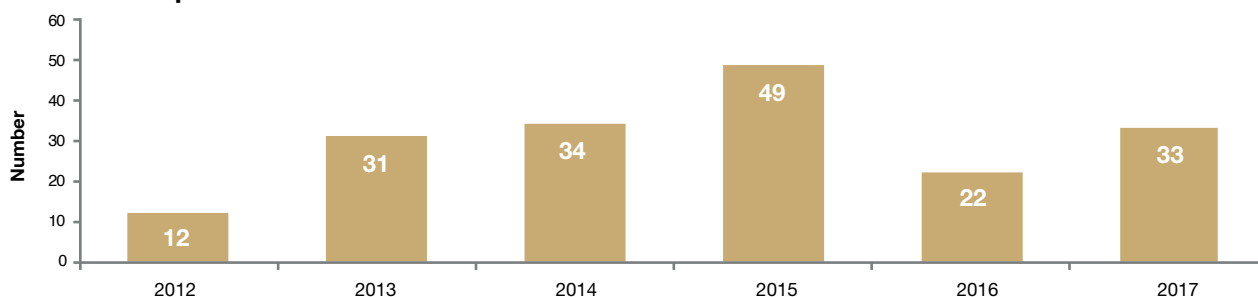


Figure 41.

## 6. Compliance monitoring inspections – 145 in 2017

NOPSEMA uses its inspections to monitor duty holders' compliance with the legislation and the commitments made in permissioning documents, such as safety cases, WOMPs, environment plans, diving safety management systems or diving project plans. Inspections also provide NOPSEMA with the opportunity to gain additional assurance that the implementation of risk management systems remains effective. In 2017, 145 inspections were conducted by NOPSEMA (covering a total of 231 facilities, titles and petroleum activities), which is an increase on the 143 inspections undertaken in 2016.

**2017  
SNAPSHOT**



**93 OHS  
inspections**  
were conducted

**44**  
**environmental  
management  
inspections**  
were conducted



**NOPSEMA  
continued using  
a risk-based  
inspection policy  
for the 145  
inspections  
in 2017**



**8 well  
integrity  
inspections**  
were conducted

## Inspections

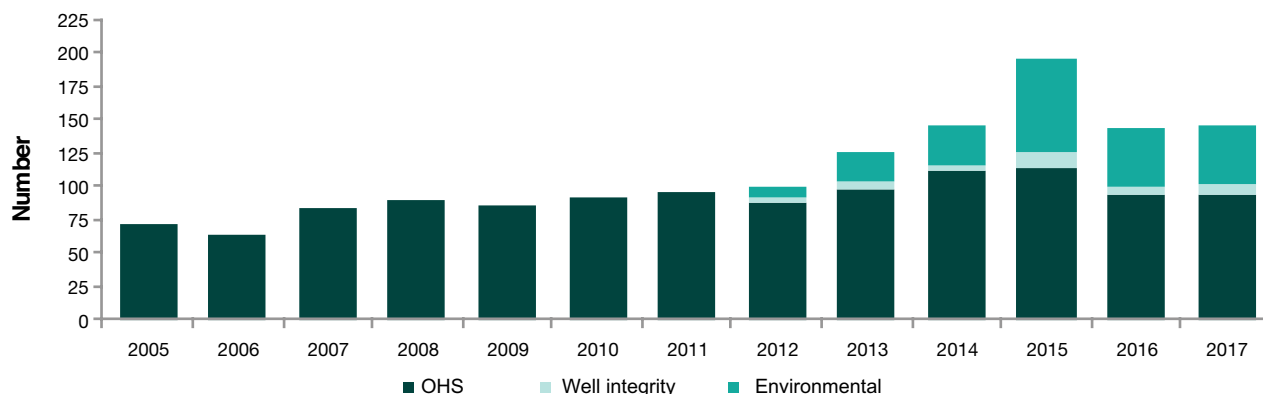


Figure 42.

During inspections NOPSEMA inspectors identify areas where duty holders require improvement. As a result of the 145 inspections conducted by NOPSEMA inspectors in 2017, 1,348 recommendations were issued to duty holders.

Inspections also identify areas where duty holders are noncompliant with their obligations. Where duty holders are found to be, and there is sufficient justification, NOPSEMA takes appropriate and proportionate enforcement action to return the duty holder to compliance and improve OHS, well integrity and environmental management performance. During 2017 NOPSEMA took 53 enforcement actions – many of these related to non-compliance identified during inspections. For information on enforcement action issued by NOPSEMA in 2017, see Chapter 7.

## When does NOPSEMA conduct inspections?

NOPSEMA has the legislative powers to require access to offshore facilities at any time. NOPSEMA usually conducts planned inspections. Inspections are announced to ensure that NOPSEMA inspectors are adequately supplied with key documents and to confirm that key personnel will be available. Inspections are planned as NOPSEMA inspectors must undertake significant preparation to adequately inspect the complex systems and controls inherent on offshore facilities. However, if NOPSEMA becomes aware of a potential breach of compliance that could present a significant increase in risks, NOPSEMA can, and does, make arrangements for arrival on the offshore facility at short notice. Such short notice inspections occur within less than 3 days. NOPSEMA has also extended its inspection programs to include ad hoc short notice inspections.

NOPSEMA also conducts regular planned and unannounced inspections at duty holders' onshore business premises. Such inspections usually involve the inspection of records related to offshore facilities.

# Compliance monitoring inspections – 145 in 2017 (Cont'd)

## Inspection planning

A wide range of potential scope items are considered when planning an inspection. Any number of these items may be selected for focus by NOPSEMA inspectors during an inspection. NOPSEMA inspectors prepare inspection scopes in accordance with the NOPSEMA 'Inspection policy' (available at [nopsema.gov.au](http://nopsema.gov.au)).

OHS inspection scopes	Well integrity inspection scopes	Environmental management inspection scopes
<p>When programming OHS inspection scopes, NOPSEMA inspectors employ a risk-based methodology that considers the following:</p> <ul style="list-style-type: none"> <li>• relevant duty holder and facility-related risk factors</li> <li>• previous performance and compliance history (informed by inspections, investigations, incident history and other performance factors)</li> <li>• industry incident trends</li> <li>• responses to recommendations from previous inspections</li> </ul>	<p>The NOPSEMA well integrity inspection scopes are designed to examine a titleholder's management of well operations and their compliance with their accepted well operations management plan and duties with respect to wells. These are based on the accepted WOMP and the activities associated with the WOMP. Well integrity inspections are generally conducted in two parts:</p> <ul style="list-style-type: none"> <li>• an onshore inspection at a titleholder's regulated business premises</li> <li>• an offshore inspection on the facility carrying out the well activity.</li> </ul>	<p>Programming of environmental inspections is undertaken using a risk-based methodology. The activities targeted for inspection are those considered to carry the highest environmental risk, including activities:</p> <ul style="list-style-type: none"> <li>• that are a first for a titleholder</li> <li>• involving exploration, development and production of heavier crude oils</li> <li>• that overlap biologically important areas or habitats critical to the survival of threatened and migratory species.</li> </ul>

## Inspection reports and recommendations

NOPSEMA issues inspection reports and recommendations to duty holders based on findings against the inspection scope items. NOPSEMA inspectors must prepare and issue an inspection report as soon as practicable, which includes any recommendations arising from the inspection. Recommendations are issued to improve standards and to ensure that duty holders do not slip into noncompliance.

In 2017, NOPSEMA inspectors issued 1031 OHS recommendations, 261 environmental management recommendations and 56 well integrity recommendations. NOPSEMA uses a regulatory management system (RMS) to record and track recommendations, duty holder's responses to recommendations and the proposed timeframe for addressing recommendations.

## Escalation

Where duty holders are found to be non-compliant, NOPSEMA takes appropriate and proportionate action to improve OHS, well integrity and environmental management performance. Where appropriate, enforcement notices may be issued however, these notices will only be issued in accordance with relevant legislative requirements and NOPSEMA's enforcement policy. For information on enforcement action issued by NOPSEMA in 2017, see Chapter 7.

For more information about NOPSEMA inspections, see the 'Inspections' and 'Compliance inspections' pages at [nopsema.gov.au](http://nopsema.gov.au).

## 6.1 Pathways to improvement – informing inspection focus topics

Offshore petroleum exploration and production are inherently high-risk activities that must be appropriately managed to protect the health and safety of people while reducing environmental risks and impacts. Understanding the potential catastrophic consequences of a major incident, NOPSEMA has identified four compliance focus areas to guide its regulatory, promotion and advice activities:



NOPSEMA has selected these pathways to improvement in accordance with its Compliance strategy to facilitate improvements in industry performance across health and safety, well integrity and environmental management. NOPSEMA will explore the focus areas through three lenses: past (preventing old accidents), present (find one, fix many) and future (emerging trends). For more information see the 'Compliance strategy' page at [nopsema.gov.au](http://nopsema.gov.au).

The above focus areas are reflected in our focus topics for annual inspections. These focus topics will continue to supplement broader compliance initiatives and will drive improved safety, well integrity and environmental outcomes.



# Compliance monitoring inspections – 145 in 2017 (Cont'd)

## 6.2 Inspection priorities for 2018-19

Looking forward, here are NOPSEMA's inspection priorities for 2018-19:

Compliance focus area	Inspection topic
<b>PREVENTING</b> major accident events (loss of life, containment)	Aging facilities and assets – maintenance and end-of life concerns
	Third party equipment and services – diving equipment
	Third party equipment and services – helicopter operations
	Safe isolation of plant and equipment
	Loss of station keeping (mooring and DP) for MODUs, FPSOs and vessel facilities
<b>PREVENTING AND MANAGING</b> loss of well control	Assets and aging facilities – well barriers and aging wells
	Third party equipment and services – well testing equipment
	BOP systems (API Std 53) for MODUs new to the regime
<b>IMPROVING</b> effective incident response and spill source control	Incident investigation and auditing
<b>IMPROVING</b> oil spill response preparedness arrangements	Effective preparedness to respond to oil spills – timely source control
	Effective preparedness to respond to oil spills – arrangements for dispersants
<b>OTHER</b>	Invasive marine species
	Simultaneous operations (SIMOPS) for new, large facilities
	Continual improvement in a low oil price environment
	Planned waste discharges
	Oil spill monitoring plan – implementation capability

## 7. Investigations and enforcements

### 7.1 Investigations

NOPSEMA will commence an investigation when it suspect, or becomes aware of, a potential non-compliance. Events that may be investigated include accidents, dangerous occurrences, reportable environmental incidents and complaints. Generally, investigations are initiated in response to incidents (that duty holders are required by law to notify and report to NOPSEMA). However, NOPSEMA may also initiate an investigation in other circumstances, such as in response to a complaint or from issues identified during a compliance inspection.

In 2017, NOPSEMA received and processed 342 incident notifications, some of which were escalated to an investigation. Twenty incidents that occurred in 2017 had a high risk category and were subsequently investigated as a priority. Of these priority inspections, 17 related to OHS and three to environmental management. As a result of these priority investigations NOPSEMA issued 27 enforcements. In addition, 121 incidents had a follow up decision to 'investigate' and were followed up at the next NOPSEMA inspection. A further 196 incidents were considered to have minimal risk potential and were not investigated in detail. However, the information provided by the duty holders, such as root causes and preventative actions in the three day and 30 day reports provided to NOPSEMA, is included in the data provided in Chapter 3.

### 7.2 Enforcements

NOPSEMA takes action to enforce compliance when it identifies non-compliance with obligations imposed by the OPGGS Act and associated regulations; or when it identifies the need for improvements in duty holders' safety, well integrity or environmental performance. Enforcement action is also taken when there is an immediate and/or significant threat to the health or safety of persons or the environment.

In 2017, NOPSEMA took 53 enforcement actions against 22 duty holders. These enforcement actions comprised:

- 30 improvement notices
- two prohibition notices
- one direction
- 13 written advice/warning letters
- six requests for revision of permissioning documents
- one intention to withdraw acceptance of permissioning document.

# Investigations and enforcements (Cont'd)

## Published notices

Clause 80 AA of Schedule 3 and Clause 12A of Schedule 2A to the OPGGS Act requires that NOPSEMA must publish on its website a prohibition notice or an improvement notice within 21 days after the notice is issued. The provisions for publication do not apply to any other types of notices, letters or enforcement actions that may be issued by NOPSEMA or NOPSEMA inspectors. A prohibition notice ceases to have effect when a NOPSEMA inspector notifies the responsible person that the inspector is satisfied that adequate action has been taken to remove the threat to health and safety or the environment specified in the notice. An Improvement Notice ceases to have effect when the responsible person takes the action that is specified in the notice.

Published notices are not removed from the website when they cease to have effect. The purpose of leaving notices on the website is to enable lessons learned from inspections to be shared with other members of the offshore petroleum industry, which in turn assists the industry as a whole to improve its performance and comply with its regulatory requirements. NOPSEMA ensures that, as far as is reasonably practicable, all personal information as defined in the Privacy Act 1988 is redacted from the notice before it is published.

To view published notices, see the 'Published notices' page at [nopsema.gov.au](http://nopsema.gov.au).

## Enforcement and investigation summary

A summary of some of the key investigation and enforcement actions taken by NOPSEMA in 2017 is provided below.

### Environmental management

#### Oil spill preparedness arrangements

While NOPSEMA focuses significant attention on ensuring the industry is doing all that it can to prevent a major oil spill from occurring. However, should an oil spill occur, it is critical that appropriate arrangements are in place to respond. NOPSEMA closely monitors the arrangements of titleholders to ensure that they remain ready should prevention fail. Prior to an activity proceeding titleholders must develop an Oil Pollution Emergency Plan (OPEP), which demonstrates appropriate preparedness and response arrangements are in place to provide timely response to an oil pollution event. A significant focus of NOPSEMA's compliance function is ensuring that these arrangements are maintained to sufficient standards for the life of the activity. Where arrangements have not been maintained, NOPSEMA has taken a number of graduated enforcement actions to refocus titleholder attention and ensure that all necessary arrangement are in place to implement a timely and effective response to an oil spill.

Oil spill preparedness arrangements are more than access to resources and equipment. They also include:

- working alongside key stakeholders to maintain relationships and coordinate capabilities
- maintaining the competency and training of personnel
- development and implementation of systems and supporting tools to ensure optimal management of a response.

During 2017, NOPSEMA took six enforcement actions relating to oil spill preparedness and response in addition to inspection recommendations made in this area. This included one warning letter, two requests for revision and three improvement notices.

The oil spill preparedness arrangement enforcement action taken in 2017 was related to the maintenance of trained and competent response personnel for managing response to a major oil pollution incident. Failure to maintain these capabilities can result in unnecessary delays in the implementation of, or incorrect applications of, oil spill response strategies and techniques in the event of a major spill. The enforcements taken in this area also related to maintenance and upkeep of plans and access to suitable oiled wildlife response capabilities.

### **Invasive marine species (IMS) management**

Australia's marine ecosystems and natural resources, and the economies and recreational activities that depend on them, face an ongoing threat of IMS introduction, establishment and spread. Once established, IMS can rarely be eradicated resulting in long-term, significant impacts on ecological integrity, the economy and social amenity.

Prior to a petroleum activity commencing, an environment plan must be accepted by NOPSEMA demonstrating that the risk of introducing IMS to Australian waters, where relevant, is managed to ALARP and an acceptable level. Potential vectors for IMS introduction by offshore petroleum activities include ballast water (water taken on and discharged by vessels to manage stability, balance and trim) and biofouling (accumulation of marine organisms on a submerged surface) associated with vessel and facility movements into and within Australian waters.

NOPSEMA's compliance function has recently included a focus on management measures to prevent the introduction and establishment of IMS in the Australian marine environment for a range of different petroleum activities. Management of this risk pathway can be particularly challenging for the mobilisation of large, complex facilities such as hydrocarbon producing and processing facilities from foreign ports to offshore petroleum titles.

During 2017, there were two instances where NOPSEMA's compliance efforts resulted in enforcement action for matters relating to monitoring and managing the risk of IMS introduction by offshore facilities and potential for transfer to sensitive environments via support vessel movements or natural dispersion. This involved the issuing of a warning letter and a request for environment plan revision by NOPSEMA. In addition, 23 recommendations on IMS management were issued in inspection reports.

### **Monitoring compliance of temporal and spatial extents of authorised activities**

NOPSEMA monitors compliance of titleholders in a number of ways, including through inspections, and reviewing regulatory notifications and reports provided by titleholders during and following petroleum activities. This information is assessed by NOPSEMA to ensure that the environmental impacts and risks of an activity are managed to an acceptable, and ALARP level, as authorised by NOPSEMA in accepted environment plans.

Through this process it was found that there were some cases where petroleum activities were not conducted in a manner consistent with the activity described in the relevant environment plan. In these circumstances, titleholders failed to recognise that changes in the activity timing and locations may have resulted in the activity being undertaken in a way that was contrary to the environment plan accepted by NOPSEMA. During 2017 three letters of warning were issued by NOPSEMA to titleholders relating to their compliance with temporal and spatial extents of petroleum activities.

# Investigations and enforcements (Cont'd)

## Safety and integrity

### Operational integrity of contracted well test equipment

Well testing is a complex and hazardous undertaking which typically includes bringing reservoir fluids (including hydrocarbons) onto the MODU facility where previously there was none. Well testing presents challenges in managing contractors that are using temporary equipment packages over relatively short work campaigns, and managing multiple interfaces between the different companies and organisations involved.

In late 2016, inspections of two MODU facilities undertaking well testing activities identified that third party equipment (TPE) supplied to each facility was outside of its recertification and therefore the facility operators could not demonstrate it was safe to use. These inspections prompted NOPSEMA to include “third party equipment and services” as an annual operating plan inspection topic for 2017, with an initial focus on facilities undertaking well testing activities.

Throughout 2017, seven MODU facilities undertaking well testing activities were inspected in relation to this scope item. An additional two business premises inspections were conducted under warrant. The findings demonstrated a need for better planning and communication between all parties involved regarding contracted equipment. Particular areas of concern or non-compliance were found in the following areas:

- inclusion of all relevant parties in risk assessment activities during campaign design and planning
- independent validation of contracted equipment in accordance with established performance standards
- testing and certification of contracted equipment
- quality assurance checks of contracted equipment prior to facility operator acceptance and mobilisation, and post installation at the facility
- response to unexpected well conditions once work was underway.

To address individual inspection findings, NOPSEMA issued a total of 27 recommendations, eight improvement notices, one prohibition notice, one general direction, and two warning letters. In addition to addressing individual findings, NOPSEMA adopted a “find one, fix many” approach and engaged members of industry to identify solutions to this trend. NOPSEMA initiated an industry workshop in collaboration with the Australian Petroleum Production and Exploration Association drilling industry steering group (DISC), International Association of Drilling Contractors (IADC), and TPE suppliers, to provide an opportunity for industry and NOPSEMA to collectively examine better ways to manage the risks associated with well testing. The workshop included presentations and panel sessions on the following topics:

- regulatory requirements and perspective
- design and planning
- expecting the unexpected
- risk assessment, validation, and assurance of contracted equipment
- planning for change
- maintaining operational boundaries

Members of DISC, IADC, and TPE suppliers have established a working group to deliver the following:

- A quality assurance/quality control matrix to define the minimum required documentation to accompany equipment going out to the facilities.
- A list of defined 'hard stops' to clarify scope boundaries for the safety case, and a strategy to communicate hard stops to all involved in the job offshore.
- Defining the worst-case boundary scenario for operations.
- Explore establishment of an Australian chapter of Petroleum Equipment and Services Association.

NOPSEMA presented this case study at the 2018 International Regulators' Forum Global Offshore Safety (IRF) meeting. The International Regulators' Forum Global Offshore Safety (IRF) members indicated that this issue affects the industry globally and is not unique to Australia.

### **Well annulus leaked gas-lift inventory from failed instrument line**

In 2017, an incident occurred where failure of an instrument tubing line connected to a wellhead gas lift line resulted in the release of a significant volume of hydrocarbon gas from the production annulus over a period of three and a half hours, elevating the risk on the facility during the release. While initiation of the surface shutdown also closed the shutdown valve fitted to the gas lift line, this did not isolate the flow of hydrocarbon gas from the production annulus. The failed instrument line had been located on the gas lift line between the wellhead production annulus and gas lift line shutdown valve. The failure of the instrument tubing line was caused by fatigue originating at the tube to swage interface joint, which was the result of repeated bending of the tube due to sea/wind movement, leading to eventual overload and failure. The gas lift was not operating at the time; however, the production annulus contained a full volume of gas under pressure.

The location of the fitting for the instrument tubing line, between the production annulus wing and gas lift shutdown valve, created the potential for an unrestricted pathway from the failed instrument tubing line to the full volume of the production annulus. It was normal practice to leave the manually operated wing valve open to the production annulus, to allow daily readings of the pressure in the production annulus. This created an unrestricted pathway from the production annulus to the failed instrument tubing line, as the shutdown valve was not able to isolate the gas inventory of the production annulus. This configuration and failure of the instrument tubing compromised the integrity of the secondary barrier envelope and potentially resulted in a situation of relying on a single barrier envelope to control the well reservoir.

NOPSEMA's investigation of the release extended to the operator's other facilities and included an extensive onshore component examining equipment strategies and previous hazard and operability studies (HAZOPs). This process identified a common risk in the gas lift well configuration across more of the operator's facilities, with other gas lift wells identified having small-bore tubing, instrumentation, and/or valve fittings fitted between the wellhead and gas lift line shutdown valve. As with the initial release, the additional facilities had no effective barriers to isolate the hydrocarbon gas contained in the production annulus in the event of a failure in the integrity of one or more fittings. Consequently, NOPSEMA issued 12 improvement notices to the operator, one for each of the 12 similar platform facilities. The actions identified from the operator's investigation were noted and monitored for progress and completion against set target dates. NOPSEMA has been advised that the findings from this investigation have been applied to additional facilities outside of Australian waters.



# Investigations and enforcements (Cont'd)

## Dynamic positioning system error tolerance

During 2016, a vessel in Australian Commonwealth waters unintentionally drifted off-location while diving activities were being conducted adjacent to a hydrocarbon facility. The 'surge' button on the Dynamic Position (DP) console was unintentionally deselected via a double-press action, deactivating the 'Auto Position' mode. The deselection was thought to have occurred by the placement of a notepad on the side of the console. The vessel drifted over 40 metres, putting at risk the lives of divers working on the seabed.

Following an investigation, NOPSEMA published a safety alert describing the incident and highlighting the importance of error tolerance in safety critical control systems. This publication prompted the US Coast Guard and the UK Health and Safety Executive to alert NOPSEMA to loss of position incidents with similar causes in their jurisdictions.

To generate a more comprehensive view of the issue, in 2017 NOPSEMA reviewed a DP incident data set covering a 15-year period. An additional 14 similar loss of position incidents were identified, suggesting that the frequency of unintended deactivation of DP systems is significantly greater when viewed from an international perspective rather than a single jurisdiction, as is the risk of loss of life.

In September 2017, NOPSEMA wrote to seven DP system manufactures providing them with an opportunity to contribute to ongoing discussions regarding error tolerance of DP Systems. To date three manufacturers have responded with recognition of the vulnerabilities of double-press buttons, describing the use of touch screen interfaces, confirmation dialogue boxes, audio feedback and/or alarms as means to reduce the likelihood of inadvertent DP mode changes.

At the International Regulators Forum (IRF) Meeting in October 2017, NOPSEMA presented the latest information on this issue and noted responses from manufacturers which showed measures to reduce risk are available, but are not necessarily widely known or adopted. The IRF member countries recognised that this is a global challenge, and agreed to take action appropriate to their regulatory regime.

The operator of the vessel facility involved in the 2016 incident had classified the probability of this type of event as "Unlikely", where "a rare combination of factors would be required for an incident to result". Analysis of the global dataset and communications with IRF members contradicts this classification. The frequency of unintended deactivation of DP systems indicates a larger probability, requiring the application of further control measures to mitigate the risk. NOPSEMA will continue efforts to improve DP controls in 2018. An assessment of the degree to which vessel facility operators in Australia have identified and addressed this risk on their facilities is underway. Where risk has not been appropriately addressed, NOPSEMA will act to ensure that the risk of inadvertent DP deactivation is reduced to a level that is ALARP.

# Appendices





# Appendix 1 – classification of fatalities and injuries

In accordance with SCAP 905 & Australian Standard AS1885.1-1990:

Code	Category	Definition
FT	Fatality	Any work-related death that occurs within one year of the incident: <ul style="list-style-type: none"> <li>• includes missing persons</li> <li>• does not include fatalities that are due to natural causes.</li> </ul>
MI	Major injury	Any work related injury that results in: <ul style="list-style-type: none"> <li>• amputation: includes whole or partial amputation of parts of the body (does not include loss of fleshy tip of finger, nail, or tooth)</li> <li>• skeletal injuries: includes bone fractures (including chipped or cracked bone or hairline fractures) and dislocation</li> <li>• burns: only if the injured person becomes unconscious, is admitted to hospital, or requires resuscitation</li> <li>• injuries to internal organs: only if the injured person becomes unconscious, is admitted to hospital, or requires resuscitation</li> <li>• eye injuries resulting in loss of sight (permanent or temporary)</li> <li>• eye injuries resulting in a penetrating eye injury or a chemical or hot metal burn to the eye</li> <li>• any acute illness caused by exposure to harmful chemicals or biological agents and physiological effects e.g. decompression illness, loss of hearing, and radiation sickness</li> <li>• hypothermia or heat-induced illness (unconsciousness)</li> <li>• any injury resulting in unconsciousness, resuscitation, or admittance to hospital.</li> </ul>
LTI ≥ 3	Lost time injury ≥3 days	Any work-related injury (other than a 'major injury') which results in a person being unfit for work on any day <sup>7</sup> after the day of occurrence of the injury and remains off work for three days or more.
LTI <3	Lost time injury <3 days	Any work-related injury (other than a 'major injury') which results in a person being unfit for work on any day <sup>8</sup> after the day of occurrence of the injury and remains off work for one or more days but less than three days.
ADI	Alternative duties injury	Any work-related injury (other than a 'major injury') which results in a person being unfit for full performance of their regular job on any day after the occupational injury. Work performed might be: an assignment to a temporary job, part-time work at the regular job or working full-time in the regular job, but not performing all the usual duties of the job. Where no meaningful work is being performed, the incident should be recorded as a lost workday case.
MTI	Medical treatment injury	Cases that are not severe enough to result in lost work day cases or alternative duty cases but are more severe than requiring simple first aid treatment.

Note: For more information about these codes and categories, see NOPSEMA's guidelines – 'N0300 – GL0033 – Guideline on monthly reporting – deaths and injuries' under the 'Safety - Reporting Accidents and Dangerous Occurrences – Forms – Monthly Summary Report' at [nopsema.gov.au](http://nopsema.gov.au).

<sup>7</sup> 'Any day' includes rest days, weekend days, leave days, public holidays, or days after ceasing employment.

<sup>8</sup> 'Any day' includes rest days, weekend days, leave days, public holidays, or days after ceasing employment.

## Appendix 2 – injury groups

Group code	Group name	Category	Category name
TRCs	Total recordable cases	FT	Fatality
		MI	Major injury
		LTI ≥3 days	Lost time injury of three or more days
		LTI <3	Lost time injury of less than three days
		ADI	Alternative duties injury
		MTI	Medical treatment injury
LTIs	Lost time injuries	LTI ≥3 days	Lost time injury of three or more days
		LTI <3 days	Lost time injury of less than three days
MTI	Medical Treatment Injury	MTI	See Guidance –GL0033
ADI	Alternative Duty Injury	ADI	See Guidance –GL0033

*Note: For more information about these codes and categories, see NOPSEMA's guidelines – 'N0300 – GL0033 – Guideline on monthly reporting – deaths and injuries' under the 'Safety - Reporting Accidents and Dangerous Occurrences – Forms – Monthly Summary Report' at [nopsema.gov.au](http://nopsema.gov.au).*

## Appendix 3 – root causes

The following definitions of root cause categories are summarised and adapted from the TapRoot Root Cause Tree Dictionary. They are provided for general information only and do not represent a complete or exhaustive definition of each category.

Root causes		
Equipment difficulty	Design	A design problem caused the equipment to fail, where design was conducted in-house, or where in-house engineers participated in the design.
	Equipment parts/defects	Parts or equipment were defective before installation due to problems in manufacturing, procurement, shipping and handling, storage, and/or quality assurance.
	Management systems - equipment	Failure to implement effective corrective actions for known deficiencies.
	Preventive maintenance	Equipment difficulty could have been prevented had a sound preventative maintenance plan been in place
	Tolerable failure	Category reserved for failures that are of such low consequence and frequency that corrective actions are not deemed necessary.
Human performance difficulty	Communications	Lack of communication, or communication error, between people performing work, or between supervisor and personnel.
	Human engineering	An issue was caused by poor or undesirable human factors engineering and/or ergonomics; namely, human-machine interface problems, poor work environment, system complexity, non-fault tolerant system.
	Management systems - people	An issue could have been prevented through better standards, policies, or administrative controls; or through appropriate use of existing standards, policies, and administrative controls.
	Procedures	Performance would have improved with the use of a well-written procedure.
	Quality control	Formal, independent inspection of work was not conducted, or was poorly conducted.
	Training	Performance would have improved had the person received better training in task understanding, skill development, or maintenance of skill and knowledge.
	Work direction	An issue could have been prevented through reasonable preparation and supervision of work.
Other	N/A or none	Operator did not identify root cause or was not applicable for the incident.
		The root cause is not provided for in the other categories.



## Appendix 4 – incident notification classification scheme

Incident type		
OHS incidents	Accidents	<ul style="list-style-type: none"> <li>• Death or serious injury</li> <li>• Incapacitation <math>\geq 3</math> days LTI</li> </ul>
	Dangerous occurrences	<ul style="list-style-type: none"> <li>• Could have caused death or serious injury</li> <li>• Could have caused incapacitation <math>\geq 3</math> days LTI</li> <li>• Fire or explosion</li> <li>• Collision – marine vessel and facility</li> <li>• Uncontrolled HC release <math>&gt;1</math>-300 kg</li> <li>• Uncontrolled HC release <math>&gt;300</math> kg</li> <li>• Uncontrolled PL release <math>&gt;80</math>-12 500 L</li> <li>• Uncontrolled PL release <math>&gt;12</math> 500 L</li> <li>• Unplanned event – implement ERP</li> <li>• Damage to safety-critical equipment</li> <li>• Other kind needing immediate investigation</li> <li>• Pipeline – kind needing immediate</li> <li>• Investigation</li> <li>• Pipeline – substantial risk of accident</li> <li>• Pipeline – significant damage</li> <li>• Well kick <math>&gt;50</math> barrels</li> </ul>
Well integrity incidents	Communications	<ul style="list-style-type: none"> <li>• Loss of integrity - <math>&gt;1</math> kg gas released</li> <li>• Loss of integrity - <math>&gt;80</math> L liquid released</li> <li>• Failure of hydrostatic pressure - BOP closure and positive well pressure</li> <li>• Loss of integrity - well-related equipment damage or failure</li> <li>• Potential loss of integrity - well-related equipment damage/failure</li> <li>• Loss of well control - any other unplanned occurrence</li> </ul>
Environmental incidents	Reportable	<ul style="list-style-type: none"> <li>• Hydrocarbon vapour/petroleum fluid release</li> <li>• Chemical release</li> <li>• Drilling fluid/mud release</li> <li>• Fauna incident</li> <li>• Matters protected under Part 3 of the EPBC Act</li> <li>• Other</li> </ul>
	Recordable	<ul style="list-style-type: none"> <li>• Non-hydrocarbon air emissions</li> <li>• Hydrocarbon gas release/air emissions</li> <li>• Hydrocarbon spill <math>&lt;80</math> L</li> <li>• Chemical spill</li> <li>• Other unplanned liquid discharge</li> <li>• Spill to deck – no discharge to marine environment</li> <li>• Non-conformance with planned discharge</li> <li>• Solid waste discharge/dropped object</li> <li>• Injury or death – fauna</li> <li>• Seabed/benthic damage</li> <li>• Equipment not functioning</li> <li>• Breach of procedural control</li> <li>• Other</li> </ul>

# Appendix 5 – data tables

## 1 Industry activity

### Active dutyholders

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Facility operators (OHS)	30	30	35	34	41	36	39	36	32	35	38	32	40

### Active facility types

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Platforms	54	54	53	55	60	58	57	32	31	32	26	34	34
FPSOs/FSOs	12	13	14	14	14	15	14	13	11	11	13	10	11
MODUs	16	13	14	15	19	14	16	12	12	12	11	8	5
Vessels	10	9	11	12	17	10	13	14	12	17	17	12	14
Pipelines	6	16	68	68	70	110	109	80	83	76	81	85	87
Other													5
<b>TOTAL</b>	<b>98</b>	<b>105</b>	<b>160</b>	<b>164</b>	<b>180</b>	<b>207</b>	<b>209</b>	<b>151</b>	<b>149</b>	<b>148</b>	<b>148</b>	<b>149</b>	<b>156</b>

### Total offshore hours worked

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fixed	6,045,187	5,489,338	5,183,438	5,553,053	6,035,719	7,220,691	7,197,149	7,359,360	5,958,080	5,468,071	5,822,613	6,355,843	9,564,692
Mobile	3,668,039	4,511,902	6,037,559	7,441,108	8,712,551	6,191,940	6,942,732	8,323,697	7,400,623	9,375,803	9,865,924	3,427,649	3,189,702
<b>Total</b>	<b>9,713,226</b>	<b>10,001,240</b>	<b>11,220,997</b>	<b>12,994,161</b>	<b>14,748,270</b>	<b>13,412,631</b>	<b>14,139,881</b>	<b>15,683,057</b>	<b>13,358,703</b>	<b>14,843,874</b>	<b>15,688,537</b>	<b>9,783,492</b>	<b>12,754,394</b>

## Fixed active facilities by nearest state – 2017

State	Facility Type	Total	%
VIC	Pipeline	54	74.0%
	Platform - NNA	9	12.3%
	Platform - NA	9	12.3%
	Other	1	1.4%
	<b>VIC Total</b>	<b>73</b>	<b>53.3%</b>
WA	Pipeline	27	50.0%
	FPSO	10	18.5%
	Platform - NNA	7	13.0%
	Platform - NA	6	11.1%
	Other	4	7.4%
	WA Total	54	39.4%
	<b>WA Total</b>	<b>48</b>	<b>37.2</b>
NT	Pipeline	4	66.7%
	Platform - NNA	1	16.7%
	FPSO	1	16.7%
	<b>NT Total</b>	<b>6</b>	<b>4.4%</b>
TAS	Pipeline	2	50.0%
	Platform - NNA	1	25.0%
	Platform - NA	1	25.0%
	<b>TAS Total</b>	<b>4</b>	<b>2.9%</b>
<b>Grand Total</b>		<b>137</b>	<b>100.0</b>

## Seismic activities by nearest state – 2017

State	Total	%
WA	2	33.3
NT	4	66.7
<b>Total</b>	<b>6</b>	<b>100</b>

## Appendix 5 – data table (Cont'd)

### 2 Assessments and submissions

#### Submissions by division – key permissioning documents\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS	103	130	124	168	147	111	196	142	91	96	109	76	109
WI							29	31	32	32	30	45	40
EM								103	119	75	44	32	41
PSZ								10	5	10	4	8	4

**\*Key permissioning documents include:**

**OHS:** safety cases, diving safety management systems, pipeline safety management plans (from 2012 the requirement to submit Pipeline SMPs was superseded by the requirement for pipelines to have an accepted safety case).

**WI:** well operations management plans.

**EM:** environment plans and offshore project proposals.

**PSZ:** petroleum safety zone applications.

# All submission types

	Assessment type	Sub-types	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Occupational health and safety</b>	Safety cases	Safety case new	18	12	21	29	17	26	25	27	20	28	27	14	27
		Safety case revised	68	105	93	109	110	74	151	106	69	62	75	59	76
	Diving	Diving project plan	14	9	1	0	0	0	0	0	0	0	0	0	2
		Diving SMS new	0	0	2	2	6	5	6	5	1	0	2	0	3
		Diving SMS revised	10	0	1	4	2	1	3	4	1	6	5	3	3
		Diving start-up notice	0	0	0	0	0	0	0	23	24	20	8	8	15
	Other	Pipeline SMP new*	6	11	3	7	2	2	2	N/A	N/A	N/A	N/A	N/A	N/A
		Pipeline SMP revised*	1	2	4	17	10	3	9	N/A	N/A	N/A	N/A	N/A	N/A
		Proposed pipeline management plan*	0	1	0	5	1	1	0	N/A	N/A	N/A	N/A	N/A	N/A
		Scope of validation	1	2	21	78	46	53	63	55	45	49	54	44	54
		Request for exemption	0	0	2	2	1	0	0	0	0	0	0	0	0
		WOMP new							28	27	26	23	21	45	30
<b>Well integrity</b>	Well operations management plans	WOMP variation							1	4	6	9	9	0	10
		Well activity application							141	162	87	130	107	59	34
		Final abandonment report							0	0	0	0	0	6	28
		Request to Undertake a Well Activity in a Specified Manner							0	0	0	0	0	1	0
		Environment plan new								92	79	57	37	20	20
		Environment plan revised								11	40	18	7	11	20
<b>Environmental management</b>	Environment plans	Environment plan summary								0	0	0	0	24	32
		End of an environment plan (Reg 25A)								0	0	11	9	15	94
		Offshore project proposals								0	0	0	0	1	1
		PSZ application new								7	3	10	2	1	3
		PSZ application variation								3	2	0	2	7	1
		PSZ access application								0	1	0	0	1	0
<b>Petroleum safety zones</b>	Safety zones	ATBA access application								5	5	0	11	0	2
		Regulatory advice to other agencies	5	10	5	4	1	0	6	6	18	56	21	45	39
			126	157	164	265	202	167	439	537	427	479	397	363	494
<b>Other</b>	Advise														
<b>Total</b>															

\*From 2012 the requirement to submit Pipeline SMPs was superseded by the requirement for pipelines to have an accepted safety case.



# Appendix 5 – data table (cont'd)

## 2 Assessments and submissions (cont'd)

### Assessments notified within legislated timeframes – key permissioning documents

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS	62%	51%	56%	52%	78%	84%	91%	99%	97%	100%	97%	100%	98%
WI							96%	100%	100%	97%	100%	100%	100%
EM								99%	100%	100%	100%	100%	100%
PSZ								100%	100%	100%	75%	100%	100%

### Assessments not accepted\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS	2.4%	3.2%	6.1%	10.2%	12.0%	12.5%	31.9%	30.1%	22.0%	26.7%	26.0%	24.4%	18.2%
WI							0.0%	3.6%	1.0%	1.7%	4.4%	3.7%	1.1%
EM								9.2%	5.0%	0.0%	3.9%	3.1%	6.1%

\*Note: based on date of completion. Only includes assessments that have been completed (excludes those in progress and recalled/cancelled).

### Safety cases by facility type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MODUs	31	49	56	68	62	33	45	39	21	29	34	15	18
Vessels	20	17	12	19	27	22	25	23	22	23	26	19	30
Pipelines					2	9	51	11	10	9	16	11	13
Platforms	27	37	35	26	13	19	41	37	18	20	13	13	30
FPSOs	7	6	6	18	17	13	13	20	13	7	11	11	8
Other	1	8	5	7	6	4	1	3	5	2	2	4	4

Note: \*these figures reflect only those Safety cases solely for pipelines.

\*\*some platform Safety cases include pipeline facilities.

### Safety cases rejected\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
% rejected	2.70%	3.23%	6.31%	10.69%	10.83%	12.50%	32.39%	30.46%	22.99%	25.26%	23.71%	24.00%	16.35%

\*Note: Based on year of completion (decision date). Shows rejections as a proportion of total safety cases assessed and completed (excludes recalled/returned assessments).

### Average safety case assessment timeframes (days)\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
New	81	76	80	110	97	162	243	90	110	58	79	86	86
Revision	45	42	44	36	39	51	50	45	42	44	33	43	44

\*Note: based on year of submission.

### Well operations management plans rejected

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
% rejected							11.54%	0.00%	3.33%	9.68%	3.45%	6.45%	0.00%

### Average well operations management plan timeframes (days)\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
New							23	22	38	28	15	42	51
Variation							15	17	22	16	9	0	26

\*Note: based on year of submission.

### Submitted environment plans – activity type

	2012	2013	2014	2015	2016	2017
Construction	7	13	2	1	0	2
Decommissioning	1	0	1	0	2	0
Drilling	42	31	23	8	5	9
Operations	3	27	15	5	10	9
Other	17	25	12	8	3	10
Seismic	33	22	22	22	11	10

### Environment plans rejected

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
% rejected								9.23%	4.95%	0.00%	3.92%	3.13%	6.06%

### Average environment plan assessment timeframes (days)\*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
New								111	98	105	139	147	119
Variation								220	217	103	52	151	111

\*Note: based on year of submission.

### 3 Incidents

#### Total accidents

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Accidents	21	34	32	47	41	43	29	21	13	9	12	4	10

#### Accidents by facility type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FPSOs	6	10	3	6	6	10	2	7	2	3	3	0	2
MODUs	6	12	14	23	12	16	12	4	8	1	3	2	4
Other	1	0	2	3	0	0	0	0	0	0	0	0	0
Pipelines	0	0	0	0	0	0	0	0	0	1	0	0	0
Platforms	6	10	6	4	7	12	7	7	3	1	2	2	3
Vessels	2	2	7	11	16	5	8	3	0	1	4	0	1

#### Accidents basic causes - OHS

	2013	2014	2015	2016	2017
Design	23%	20%	8%	0%	29%
Work Direction	25%	17%	16%	67%	24%
Procedures	18%	20%	20%	0%	18%
Management Systems - people	5%	0%	8%	0%	12%
Human Engineering	10%	17%	32%	17%	6%
Training	0%	0%	0%	17%	6%
Tolerable failure	0%	0%	0%	0%	6%
Preventive Maintenance	5%	0%	8%	0%	0%

#### Total dangerous occurrences

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Dangerous occurrences	133	173	231	357	307	346	305	383	356	348	364	303	293

### Dangerous occurrences by facility type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FPSOs	33	29	68	146	105	161	123	172	167	168	194	161	157
MODUs	50	63	74	84	63	53	37	53	65	53	50	25	20
Other	7	8	5	7	6	9	8	0	0	0	0	9	1
Pipelines	0	1	1	0	0	0	2	0	2	2	3	1	1
Platforms	32	67	75	105	80	111	113	145	120	110	97	101	102
Vessels	11	5	8	15	53	12	23	13	2	15	20	6	11
N/A	0	0	0	0	0	0	0	0	0	0	0	0	1

### Dangerous occurrences basic causes - OHS

	2013	2014	2015	2016	2017
Design	28%	21%	13%	18%	20%
Tolerable failure	2%	5%	9%	4%	15%
Preventive maintenance	13%	15%	21%	19%	14%
Procedures	12%	14%	16%	14%	12%
Management systems - people	8%	5%	4%	6%	8%
N/A or None	7%	7%	6%	7%	7%
Equipment parts/defects	6%	10%	16%	14%	6%
Work direction	5%	5%	3%	4%	6%
Human engineering	9%	11%	6%	9%	4%

### OHS Hydrocarbon releases

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Uncontrolled HC release > 1-300kg	11	14	21	18	15	22	18	13	19	20	12	16	18
Uncontrolled HC release > 300 kg	1	4	1	3	5	3	2	3	0	3	2	3	1
Uncontrolled PL release > 80-12 500 L	0	1	6	2	3	7	8	1	1	2	4	4	6
Uncontrolled PL release > 12 500 L	0	0	0	0	1	0	0	0	0	0	0	0	0

# Appendix 5 – data table (Cont'd)

## 3 Incidents (cont'd)

### Hydrocarbon releases basic causes – OHS

	2013	2014	2015	2016	2017
Preventive maintenance	20%	13%	17%	25%	36%
Design	33%	37%	17%	28%	33%
Management systems - people	10%	10%	9%	9%	12%
Procedures	13%	13%	13%	22%	3%
Equipment parts/defects	5%	4%	17%	6%	3%
Quality control	3%	0%	4%	0%	3%
Tolerable failure	10%	6%	17%	3%	3%
N/A or None	0%	2%	0%	3%	3%

### Total OHS gas releases

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Australia - rate per 100 million BOE	4.14	7.18	10.06	7.86	7.47	8.77	6.79	4.93	5.97	7.01	3.90	4.68	3.71
IRF Countries* - rate per 100 million BOE	2.80	4.61	3.36	2.50	3.24	3.26	3.51	3.51	3.89	5.90	7.50	5.90	N/A

\*Excludes the US as they do not report hydrocarbon releases

### Reportable environmental incidents

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Hydrocarbon vapour / petroleum fluid release								2	6	13	8	5	7
Chemical release								6	14	8	2	0	3
Fauna incident								4	5	1	0	2	1
Drilling fluid/ mud release								5	4	0	0	0	0
Other								0	2	0	2	1	1
<b>Total</b>								<b>17</b>	<b>31</b>	<b>22</b>	<b>13</b>	<b>8</b>	<b>12</b>



## 4 Fatalities and injuries

### Total recordable cases

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fatalities	0	0	0	1	0	0	0	2	0	0	0	0	0
Major injuries	8	5	7	12	12	9	8	5	2	2	5	0	4
Lost time injuries >= 3 days	17	26	21	29	31	32	20	16	13	5	7	4	6
Lost time injuries < 3 days	9	13	3	6	5	3	6	3	0	2	2	3	1
Medical treatment injuries	79	58	61	89	39	61	47	36	26	20	44	22	30
Alternative duties injuries	14	21	58	53	28	47	37	43	28	26	30	24	11
<b>Total</b>	<b>127</b>	<b>123</b>	<b>150</b>	<b>190</b>	<b>115</b>	<b>152</b>	<b>118</b>	<b>105</b>	<b>69</b>	<b>55</b>	<b>88</b>	<b>53</b>	<b>52</b>

### Injury rates by facility type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FPSOs	18.20	20.97	11.84	12.01	10.54	16.32	9.80	8.74	6.42	6.66	4.83	6.73	4.09
MODUs	11.81	14.26	14.55	16.44	7.78	10.15	10.76	6.23	5.51	3.68	3.24	2.64	2.93
Other	8.36	21.02	20.60	15.54	5.71	13.28	14.26	25.25	9.57	2.40	13.72	21.30	0.00
Pipelines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	0.00	0.00	5.05
Platforms	12.79	8.53	13.09	10.08	6.81	9.14	5.04	6.23	5.47	5.46	7.39	6.46	5.01
Vessels	13.43	5.24	9.37	18.88	7.84	13.44	8.30	5.07	2.34	1.90	6.13	5.18	2.02

### Total recordable cases – nature of injury

	2013	2014	2015	2016	2017
Wounds and amputations	31.9%	45.5%	36.4%	43.4%	42.3%
Traumatic joint and muscle injuries	30.4%	21.8%	19.3%	26.4%	38.4%
Fractures	11.6%	9.1%	9.1%	9.4%	7.7%
Musculoskeletal, systemic and infectious diseases	7.3%	9.1%	22.7%	13.2%	5.8%
Unspecified	17.4%	12.7%	8.0%	5.7%	5.8%
Spinal, intracranial and nervous system injuries	0.0%	0.0%	4.5%	1.9%	0.0%
Burns	1.4%	1.8%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

# Appendix 5 – data table (Cont'd)

## 4 Fatalities and injuries (cont'd)

### Total recordable cases – location of injury

	2013	2014	2015	2016	2017
Upper limbs	36.2%	47.3%	31.8%	45.3%	38.5%
Lower limbs	27.5%	21.8%	19.3%	22.7%	26.9%
Head and neck	20.3%	16.4%	29.6%	17.0%	15.4%
Trunk	1.5%	9.1%	3.4%	7.5%	13.4%
Back (upper and lower)	7.2%	3.6%	12.5%	7.5%	5.8%
Systemic	1.5%	0.0%	2.3%	0.0%	0.0%
Unspecified	5.8%	1.8%	1.1%	0.0%	0.0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

### Total recordable cases – mechanism of incident

	2013	2014	2015	2016	2017
Hitting objects	21.7%	14.5%	19.3%	26.4%	26.9%
Body stressing	14.5%	14.5%	15.9%	20.8%	26.9%
Hit by moving objects	44.9%	45.5%	31.8%	32.1%	25.0%
Falls, trips, slips	7.2%	7.3%	6.8%	5.6%	17.4%
Chemicals and other substances	1.5%	3.7%	17.1%	7.5%	1.9%
Unspecified (incl. other, multiple)	8.7%	10.9%	1.1%	3.8%	1.9%
Heat, electricity, environmental	1.5%	3.6%	8.0%	3.8%	0.0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

### Total recordable cases – agency of injury

	2013	2014	2015	2016	2017
Non-powered equipment	44.9%	47.3%	47.7%	43.3%	53.8%
Machinery / fixed plant	20.3%	23.7%	14.8%	32.1%	13.5%
Powered equipment	2.9%	3.6%	9.1%	1.9%	11.5%
Unspecified	13.0%	10.9%	0.0%	3.8%	9.6%
Mobile plant / transport	0.0%	3.6%	1.1%	3.8%	5.8%
Chemicals and other substances	18.9%	7.3%	25.0%	13.2%	3.9%
Environmental and biological agencies	0.0%	3.6%	2.3%	1.9%	1.9%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## 5 Complaints

### Complaints

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS complaints	29	35	22	25	12	15	23	5	6	3	3	1	8
EM complaints								0	4	2	2	1	0
<b>Total</b>	<b>29</b>	<b>35</b>	<b>22</b>	<b>25</b>	<b>12</b>	<b>15</b>	<b>23</b>	<b>5</b>	<b>10</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>8</b>

## 6 Inspections

### Inspections

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS	72	63	85	90	85	92	95	88	98	111	114	93	93
Well integrity							0	4	5	5	12	6	8
Environment								7	23	30	69	44	44

## 7 Enforcements

### Enforcements

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OHS	30	27	37	66	56	25	97	60	36	25	34	3	36
Well integrity							0	0	1	0	0	0	0
Environment								9	43	1	4	5	16
Other								0	0	0	0	2	1
<b>Total</b>	<b>30</b>	<b>27</b>	<b>37</b>	<b>66</b>	<b>56</b>	<b>25</b>	<b>97</b>	<b>69</b>	<b>80</b>	<b>26</b>	<b>38</b>	<b>10</b>	<b>53</b>

Excludes verbal warnings/advice and investigation notices.

# Appendix 5 – data table (Cont'd)

## 6 Enforcements (cont'd)

OHS enforcements by facility type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FPSOs	10	5	7	13	15	8	37	7	8	8	0	0	5
MODUs	6	6	11	32	9	5	5	18	13	5	8	0	8
N/A	3	2	4	0	4	0	3	0	0	2	0	0	3
Other	0	3	1	3	2	3	2	6	3	1	2	0	3
Pipelines	0	0	0	0	0	0	6	22	0	0	0	0	0
Platforms	6	11	11	13	5	6	28	6	9	1	17	2	16
Vessels	5	0	3	7	21	3	16	1	2	8	7	1	0
Well	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>Total</b>	<b>30</b>	<b>27</b>	<b>37</b>	<b>68</b>	<b>56</b>	<b>25</b>	<b>97</b>	<b>60</b>	<b>36</b>	<b>25</b>	<b>34</b>	<b>3</b>	<b>36</b>

EM enforcements by petroleum activity type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Construction								0	2	0	0	0	0
Decommissioning								0	4	0	0	0	0
Drilling								2	6	0	0	0	0
Operations								2	26	0	3	3	13
Other								2	2	0	0	1	0
Seismic								0	1	1	1	1	2
Not specified								3	2	0	0	0	1
<b>Total EM</b>								<b>9</b>	<b>43</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>16</b>

# Glossary – acronyms and common terms

Term	Definition
<b>Activity or petroleum activity</b>	As defined in the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009
<b>ADI</b>	Alternative duties injuries
<b>ALARP</b>	As low as reasonably practicable. A principle that provides a means for assessing the tolerability of risk
<b>API STD 53</b>	American Petroleum Institute Standard 53
<b>ATBA</b>	Area to be avoided
<b>Blowout</b>	An uncontrolled release of hydrocarbons from a well
<b>BOP</b>	Blow out preventer
<b>Dangerous occurrence</b>	See definition in clause 82 of Schedule 3 to the <i>Offshore Petroleum Greenhouse Gas Storage Act 2006</i>
<b>DISC</b>	Australian Petroleum Production and Exploration Association drilling industry steering group
<b>DPP</b>	Diving project plan
<b>DSMS</b>	<i>Diving safety management system</i>
<b>Duty holders</b>	Parties with legislative responsibilities under the <i>Offshore Petroleum Greenhouse Gas Storage Act 2006</i>
<b>EM</b>	Environmental management
<b>EP</b>	Environment plan
<b>HAZOP</b>	Hazard and operability study
<b>HC</b>	Hydrocarbon(s): organic compounds of carbon and hydrogen
<b>HSR</b>	Health and safety representative
<b>IADC</b>	International Association of Drilling Contractors
<b>Improvement notice</b>	A notice issued to the operator of a facility requiring action to prevent any further contravention or likely contravention of listed OHS law
<b>IMS</b>	Invasive marine species
<b>IRF</b>	International Regulators' Forum Global Offshore Safety
<b>LTI</b>	Lost time injury
<b>MAE</b>	Major accident event
<b>Mechanism of incident or injury</b>	A classification that captures the overall action, exposure or event that best describes the circumstances that resulted in the incident or injury.
<b>MTI</b>	Medical treatment injuries
<b>N/A</b>	Not applicable
<b>NOPSA</b>	NOPSA National Offshore Petroleum Safety Authority (NOPSEMA superseded NOPSA on 1 January 2012)
<b>NOPSEMA</b>	NOPSEMA National Offshore Petroleum Safety and Environmental Management Authority
<b>NOPTA</b>	NOPTA National Offshore Petroleum Titles Administrator
<b>NT</b>	Northern Territory
<b>OHS</b>	Occupational health and safety



# Glossary – acronyms and common terms

Term	Definition
<b>Operator</b>	Operator In relation to a facility or proposed facility, the person who, under the Regulations, is registered by NOPSEMA as the operator of that facility or proposed facility (as defined in Clause 5 of Schedule 3 of the OPGGS Act)
<b>OPGGS Act</b>	<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
<b>OPP</b>	Offshore project proposal
<b>Personal safety</b>	A category of risk management focusing on injuries such as slips, trips, falls, 'struck-by' incidents and strains. Personal safety programs place an emphasis on personal behaviour and the wearing of personal protective equipment
<b>Performance standard</b>	Are the parameters against which control measures for MAEs are assessed to ensure they reduce the risks to ALARP on an on-going basis
<b>Pipeline</b>	Pipeline See "Facility"
<b>Process safety</b>	A category of risk management focusing on the prevention of uncontrolled releases of hydrocarbons, chemicals, energy, or other potentially dangerous materials (including steam) during the course of facility processes and which can cause major accident events; Process safety involves, for example, the prevention of leaks, spills, equipment malfunction, overpressures, over-temperatures, corrosion, metal fatigue and other similar conditions; process safety programs focus on design of facilities, maintenance of equipment, alarms, effective control points, procedures and training
<b>Prohibition notice</b>	A notice issued to the operator of a facility in order to remove an immediate threat to the health or safety of any person
<b>PSMP</b>	Pipeline safety management plan. A plan for managing OHS risks to personnel at or near pipeline facilities
<b>PSZ</b>	Petroleum safety zone
<b>QA</b>	Quality assurance
<b>QC</b>	Quality check
<b>Risk assessment</b>	The purpose of a risk assessment is to provide the operator of a facility with a detailed understanding of all aspects of the risks to people that may arise at or near the facility.
<b>ROV</b>	Remotely operated vehicle
<b>SC</b>	Safety case: a document prepared and submitted by an operator of a facility to NOPSEMA that identifies the hazards and risks at the facility, describes how the risks are controlled and the health and safety management systems which are in place to ensure that the controls are effectively and consistently applied
<b>SCAP</b>	Safety case administration procedure
<b>SMP</b>	Safety management plan
<b>SMS</b>	Safety management system
<b>TapRoot®</b>	A classification system for root cause analysis
<b>Titleholder</b>	The permittee of a petroleum exploration permit, the lessee of a petroleum retention lease, or the licensee of a petroleum production licence (as defined in subsection 51 and 572(1) of the <i>Offshore Petroleum Greenhouse Gas Storage Act 2006</i>
<b>TOOCS</b>	Type of occurrence classification system
<b>TPE</b>	Third party equipment
<b>TRC</b>	Total recordable cases

Term	Definition
<b>Wellhead</b>	A general term used to describe the component at the surface of an oil or gas well that provides the structural and pressure-containing interface for the drilling and production equipment
<b>WI</b>	Well integrity
<b>WOMP</b>	Well operations management plan: a document that the titleholder must submit which should specify acceptable methods of conducting well operations in accordance with sound engineering principles and good oilfield practice
<b>TapRoot®</b>	A classification system for root cause analysis
<b>Titleholder</b>	The permittee of a petroleum exploration permit, the lessee of a petroleum retention lease, or the licensee of a petroleum production licence (as defined in subsection 51 and 572(1) of the <i>Offshore Petroleum Greenhouse Gas Storage Act 2006</i> )
<b>TOOCS</b>	Type of occurrence classification system
<b>TRC</b>	Total recordable cases
<b>Wellhead</b>	A general term used to describe the component at the surface of an oil or gas well that provides the structural and pressure-containing interface for the drilling and production equipment
<b>WI</b>	Well integrity
<b>WOMP</b>	Well operations management plan - A document that the titleholder must submit which should specify acceptable methods of conducting well operations in accordance with sound engineering principles and good oilfield practice

**The following categories of facilities are recognised within the legislation:**

<b>Facility</b>	A vessel, structure or pipeline at which offshore petroleum operations are being performed – defined in Clause 4 of Schedule 3 to the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
<b>Accommodation, construction and pipelay vessel</b>	A maritime vessel used in the construction of subsea infrastructure
<b>Floating production, storage and offloading vessel (FPSO)</b>	Similar in appearance to an oil tanker and carries production and processing facilities, with the addition of storage tanks for the crude oil recovered from the wells
<b>Floating storage and offloading vessel (FSO)</b>	Similar to an FPSO with reduced production and processing facilities
<b>Large production platform</b>	A large scale production facility, which can be a floating or fixed marine vessel (conducting specific activities at a location)
<b>Mobile offshore drilling unit (MODU)</b>	An offshore facility (capable of independent navigation) used for drilling or servicing a well for petroleum
<b>Pipeline</b>	A pipe or system of pipes in an offshore area used for conveying petroleum (whether or not the petroleum is recovered from an offshore area)
<b>Production platform (with drilling or no drilling, can be attended (manned) or not normally attended (unmanned))</b>	A platform from which development wells are drilled that also houses processing plant and other equipment

# References

Standards Australia 1990, Workplace Injury and disease recoding standard, Australian Standard AS1885-1. 1-1990

## Legislation

*Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth.) (No 14) 2006 as amended.

Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth.) Statutory Rules 1999 (No. 228) as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*.

Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 (Cth.) Select Legislative Instrument 2009 (No. 382) as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*.

Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011.

Regulatory Levies Act 2003. *Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Act 2003* (Cth.) (No. 117) of 2003 as amended.

Regulatory Levies Regulations 2004. Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Regulations 2004 (Cth.) Statutory Rules 2004 (No. 315) made under the *Offshore Petroleum (Regulatory Levies) Act 2003*.



**NOPSEMA expects strong and sustained leadership from industry to continue improving safety and environmental outcomes in all areas of its operations.**





**NOPSEMA**

**National Offshore Petroleum Safety and  
Environmental Management Authority (NOPSEMA)**

ABN 22 385 178 289

**Head Office, Perth**

Level 8, 58 Mounts Bay Road, Perth WA 6000  
GPO Box 2568, PERTH WA 6001

phone: +61 8 6188 8700 fax: +61 8 6188 8737  
email: [communications@nipsema.gov.au](mailto:communications@nipsema.gov.au)