At a recent industry conference, I was given the opportunity to deliver a keynote address about the future of HSE regulation. While NOPSEMA has identified a range of actions to pursue in an effort to improve industry performance, this topic suggests that we control regulation and industry performance. In an outcomes-based regulatory regime responsibility rests first and foremost with the regulated entity. Operators, titleholders and proponents should be driving performance improvement themselves with regulation having a limited role.

In my address I also noted the adequacy of current performance measures in managing the risks of a major accident event (MAE) as an issue for further industry discussion. Many of our existing measures show clear improvement in industry performance with personal safety, however, measures for process safety are less definitive with adverse trends emerging for hydrocarbon releases and certain dangerous occurrences. Further consideration of these measures call into question the adequacy of existing leading indicators for process safety. Having raised this issue at the conference, I was very pleased to see a receptive industry. NOPSEMA will continue its efforts to progress this issue in partnership with industry and other stakeholders.

I am pleased to report that the Triennial Operational Review of NOPSEMA has concluded and overall reflected positively on NOPSEMA. The review made 16 recommendations of which 11 were assigned solely to NOPSEMA and five shared with other parties. The final report was tabled in Parliament on 16 September and is available on the Department of Industry, Innovation and Science’s website at industry.gov.au. NOPSEMA, in conjunction with the Department, have prepared a Government Response which is expected to be tabled and available in the coming weeks.

Following the completion of NOPSEMA’s first year as the sole environment regulator of petroleum activities in Commonwealth waters, the independent review of NOPSEMA’s Program has also concluded. The review found that NOPSEMA has met all commitments under the Program. Areas for refinement were highlighted but formal recommendations were not considered necessary. The final report and the Government’s response are available on the NOPSEMA Environment page.

In closing, I would like to acknowledge the contribution of departing Minister for Industry and Science, The Hon Ian Macfarlane MP. His commitment to regulatory outcomes and support reducing regulatory burden in the offshore petroleum industry has been instrumental in the establishment and performance of NOPSEMA and its predecessor, the National Offshore Petroleum Safety Authority. I would also like to welcome the appointment of The Hon Josh Frydenberg MP as Minister for Resources, Energy and Northern Australia. Minister Frydenberg has already demonstrated a commitment to reducing regulatory burden which will be welcomed by industry.

Stuart Smith, CEO
Input sought on stakeholder engagement and transparency work program

Since September 2014, NOPSEMA has been implementing a stakeholder engagement and transparency work program to drive improvements to consultation practices and increase transparency of NOPSEMA's assessment and decision-making processes in relation to environmental management.

NOPSEMA has identified the impact that poor environmental consultation practices can have on individuals, communities and organisations. NOPSEMA has also received feedback from stakeholders and through independent reviews, including the Environment Protection Biodiversity Conservation Act 1999 program review that the current level of transparency of its environmental decision-making processes and practices are not meeting community expectations.

NOPSEMA has responded by implementing a focused inspection program on consultation for seismic surveys, delivering a subscription service to notify stakeholders about the status of environment plan submissions received by NOPSEMA and publishing activity description summaries on the Environment Plan Submissions and Summaries Search page. These initiatives were implemented in support of improving titleholder consultation practices and improving community confidence about NOPSEMA’s assessment and decision making processes.

The next initiative under this work program involves NOPSEMA reviewing and updating guidance, and publishing additional information on the status of assessments and the outcomes of our decision-making. Specifically, the proposed changes include:

- updating the consultation requirements guidance note
- requiring titleholders to include details about the consultation undertaken in environment plan summary documents
- publishing up-to-date details regarding the status of assessments
- publishing details about NOPSEMA’s environment plan assessment decisions.

NOPSEMA is currently engaging with industry, government and non-government stakeholders on this initiative and is exploring opportunities to strengthen and refine the work program. NOPSEMA is also seeking feedback on the proposed changes which are available on NOPSEMA’s website for review and comment.

The public consultation period has been extended to 30 October 2015 in response to feedback from industry and other stakeholders. For more information about the stakeholder engagement and transparency work program or to access the relevant documents see the Work Programs page under the Environment tab at nopsema.gov.au.
Safe working load for crane operations

NOPSEMA inspectors recently conducted an inspection in relation to crane operations on a construction vessel facility. The inspection identified that the facility’s active heave compensated knuckle boom crane had been overloaded on several occasions during a previously completed project specifically, the safe working load (SWL) had been exceeded.

The crane was equipped with several alarms that sound when 90%, 100% and 110% of the SWL is reached. The crane also had an overload protection system that restricts the crane’s movements once the SWL is exceeded. During the inspection, it was established that on several occasions during heavy lifts the crane experienced loads in excess of its SWL, which subsequently set-off overload alarms in the crane cabin. Prior to the heavy lifts, the operator of the facility had completed lift assessments that predicted the static lift mass multiplied by a dynamic amplification factor (DAF) would exceed the SWL. The operator had also advised the crane drivers that it was acceptable to exceed the SWL.

The operator of the facility was given several recommendations in relation to NOPSEMA’s inspection findings. The findings included that the operator:

- appeared to use the crane’s design capacity to justify exceeding the SWL
- chose to ignore the inbuilt crane overload alarms and continue the lift after exceeding the SWL
- did not have an appropriate understanding of the crane’s certified SWL or use of DAFs
- failed to appropriately address the concerns of the workforce regarding operating the crane above its SWL.

A lift that would knowingly exceed the SWL of a crane should not be undertaken. The SWL of a crane is dependent on factors including operating conditions, configuration and position. The application of a DAF effectively reduces the maximum mass that can be safely lifted. Overloading a crane is unsafe and likely to be a breach of an operator’s general duty to ‘take all reasonably practicable steps to ensure that all work and other activities carried out on the facility are carried out in a manner that is safe and without risk to the health of any person at or near the facility’.

Dropped objects

Incidents involving dropped objects continue to be reported to both NOPSEMA and other regulators and industry associations globally.

NOPSEMA has been notified of 19 dropped object incidents so far in 2015. The monthly safety alerts published by the International Marine Contractors Association (IMCA) frequently include at least one dropped object incident. Five or six of the 30 safety alerts typically published annually by the International Association of Drilling Contractors (IADC) are also usually associated with dropped objects.

NOPSEMA was recently notified of an incident that involved a 15 kg teflon wear protection plate falling 40m from a crane boom. This incident was of particular concern given a potential fatality was narrowly avoided. During a subsequent inspection at the facility, NOPSEMA inspectors made the following observations:

- While some remedial action had been taken following the incident, there was a lack of a systematic inspection regime to identify and manage potential dropped object risks throughout the facility.
- Appropriate access to crane booms (and similar structures) to facilitate visual inspection for potential dropped objects may be inappropriately constrained by operational requirements for the equipment to be continuously available.
- A reliance on third party crane inspections and surveys (which are not focused on dropped object prevention).

Facility operators are reminded of the dropped objects prevention scheme (DROPS), an initiative established within the oil and gas industry in the late 1990s. The DROPS has effectively developed into a global work group involving over 200 operators, contractors, service companies and industry bodies. The DROPS provides a comprehensive selection of resources and guidance on:

- dropped object awareness and prevention
- best practice
- recommendations
- lessons learnt
- tools and techniques (including a DROPS calculator and templates for dropped object surveys and inspections).

For more information about DROPS, visit dropsonline.org.
Collaboration with international regulatory counterparts

In August 2015, NOPSEMA hosted a visitor from Brazil’s National Agency of Petroleum, Natural Gas and Biofuels (ANP) in support of international collaboration with fellow agencies performing functions relating to offshore petroleum operations and activities.

Ms Andréia Bravim, an oceanographer at ANP, Brazil’s representative of the International Regulators’ Forum (IRF), visited NOPSEMA for three weeks. During this time, Ms Bravim was briefed on Australia’s legislation and NOPSEMA’s role, remit and function with respect to the regulation of health and safety, well integrity and environmental management.

Representatives from NOPSEMA’s regulatory divisions provided insight into regulatory processes and strategies for assessment, inspection, investigation and enforcement activities. In exchange, Ms Bravim provided NOPSEMA’s regulatory specialists with an overview of the ANP and shared her extensive experience in auditing production facilities in Brazil.

NOPSEMA is committed to sharing regulatory insights and lessons from significant incidents with its international regulatory counterparts in support of driving improvements to industry health and safety performance globally. As part of this commitment, NOPSEMA will be participating in the 2015 IRF Offshore Safety Conference in Washington, D.C on 19-20 October. The conference is open to all of industry and will be hosted by the United States’ regulator of the offshore oil and gas industry, the Bureau of Safety and Environment Enforcement.

Under the theme ‘A holistic approach to risk management’ the conference program will provide a unique opportunity for regulators, community members, academics and industry representatives to participate in round table discussions to help inform the future priorities of the IRF. For further information about the conference or to register visit bsee.gov.

NOPSEMA has also been active in collaborating with international counterparts for environmental regulation. During September, for example, NOPSEMA hosted Dr Sam du Fresne, a Senior Advisor from the Compliance Division of New Zealand’s Environmental Protection Authority. NOPSEMA also plays a lead role in the International Offshore Petroleum Environmental Regulators (IOPER) and will be participating in the IOPER Annual General Meeting in Washington, DC on 21-23 October.
MODU mooring systems in cyclonic conditions

On 20 August 2015, NOPSEMA hosted a workshop with industry to develop and disseminate lessons learned from the recent Atwood Osprey mooring failure incident.

The Atwood Osprey mobile offshore drilling unit (MODU) experienced mooring failure during cyclone Olwyn and was blown approximately three nautical miles off location in the vicinity of subsea and surface infrastructure and an environmentally sensitive shoreline. The MODU had already been de-manned on a planned precautionary basis and no injuries to people occurred. The incident did however have the potential for significant adverse safety or environmental consequences.

NOPSEMA and Atwood Oceanics, the operator of the MODU facility, conducted parallel investigations into the incident and committed to sharing investigation findings with industry. As such, NOPSEMA hosted a joint workshop with members of the International Association of Drilling Contractors (IADC) and the Drilling Industry Steering Committee of the Australian Petroleum Production and Exploration Association (APPEA) to consider those findings and any associated learning opportunities arising from the incident.

The workshop participants discussed the contributory and secondary causal factors presented which included the likelihood that individual mooring system components failed at loads well below their design specification. Participants also applied their collective expertise and discussed ways to improve the management of the significant risks of MODU mooring failure in the context of Australian cyclone events. In particular, the group addressed:

- mooring system basis of design (including pre-laid elements)
- management of change
- installation methodologies and assurance
- operations, inspection and maintenance
- recovery preparedness and tracking
- development of common metocean and soil type data sets
- regulatory requirements.

The 50 workshop participants reported that it was very productive and highlighted the need to re-evaluate MODU mooring arrangements ahead of the forthcoming cyclone season and for the longer term. NOPSEMA intends to issue regulatory guidance addressing the key issues identified in the workshop in due course.

NOPSEMA also delivered a presentation on this topic to a broader audience at the industry DrillSafe forum held at the Perth Convention and Exhibition Centre on 10 September 2015. To access the presentation see the Presentations page under the Resources tab at nopsema.gov.au.
Independent review of NOPSEMA’s Program endorsed under the EPBC Act

Environmental Resources Management Australia (ERM) have completed the independent review of NOPSEMA’s environmental management authorisation process (the Program), endorsed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

In March 2015, ERM was commissioned to conduct the review under terms of reference agreed by the Department of the Environment, the Department of Industry, Innovation and Science (formerly the Department of Industry and Science) and NOPSEMA. The scope of the review considered NOPSEMA’s performance in meeting the Program objectives, including ensuring that impacts on matters protected under Part 3 of the EPBC Act are not unacceptable.

The review found that NOPSEMA met all Program commitments that were triggered during the review period. Further, the reviewer identified that the required processes and procedures are in place for the Program commitments to continue to be met in the future. As such, ERM concluded that no formal recommendation or modification of management arrangements were required.

In the spirit of continual improvement ERM did however make observations and suggestions regarding stakeholder engagement and transparency. In response to these observations, NOPSEMA has implemented the next initiative of its stakeholder engagement and transparency work program. For information about this work program see the ‘Input sought on stakeholder engagement and transparency work program’ article in this issue of the Regulator. For further information about the independent review see the Environment page at nopsema.gov.au.

Stena Drilling pleads guilty

On 3 September the Magistrates’ Court of Victoria imposed a criminal penalty of $330,000 against Stena Drilling Australia Pty Ltd (Stena Drilling) for their failure to implement and maintain systems of work that were safe and without risk to health as required under clause 9(2)(d) of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act).

The conviction was in relation to an accident on the Stena Clyde MODU on 27 August 2012 in the Bass Strait. The accident occurred during drilling operations which resulted in the death of Stena Clyde floorman Peter Meddens and toolpusher Barry Denholm.

The Magistrate noted that the fine would have been set at $440,000, (80 per cent of the maximum) in the absence of a guilty plea and also noted that general deterrence was required.

Since the incident occurred in 2012, the penalty amounts under the OPGGS Act have increased. The maximum penalty for an operator of a facility negligently breaching their duties relating to occupational health and safety under clause 9 is now $1,487,500.

Prior to referring the matter to the Commonwealth Director of Public Prosecutions for prosecution, NOPSEMA conducted an independent, rigorous and comprehensive investigation into the accident. As part of this investigation, NOPSEMA collected numerous witness statements and seized evidential material under warrant. NOPSEMA also engaged three expert witnesses to focus on specific areas of evidence analysis.

NOPSEMA’s investigation identified that senior management on the Stena Clyde failed to apply Stena Drilling’s management of change principles in failing to carry out a new risk assessment when deviating from the original plan of works. A summary of NOPSEMA’s considerations issued on 17 October 2012 are available at nopsema.gov.au.

Following the conviction, NOPSEMA’s CEO Stuart Smith said “This decision provides further evidence of NOPSEMA’s commitment to prosecuting serious breaches of the OPGGS Act in the interests of a safe and environmentally responsible Australian offshore petroleum industry”.

the Regulator Issue 3: 2015
nopsema.gov.au
Optimising dispersant selection for offshore pollution risks

NOPSEMA and the Australian Maritime Safety Authority (AMSA) have jointly produced an explanatory note describing the separate dispersant acceptance and decision-making regimes that apply to the maritime and offshore petroleum sectors in Commonwealth waters.

Chemical dispersants are one of the principal control measures available for oil spill response in Commonwealth waters. However, there are considerable community misconceptions about these products and the potential net environmental benefit of dispersant response strategies. Dispersant decision-making requires determining which products are acceptable for use, when they should be used and the appropriate application strategies.

The maritime regime focuses on testing dispersant products against defined effectiveness, toxicity and biodegradability criteria for ‘general purpose’ use in surface spills. Dispersants that meet these criteria can be accepted for listing on The National Plan for Maritime Environmental Emergencies (The National Plan) oil spill control agent (OSCA) register. The decision on whether to use a ‘listed’ dispersant is then based on the circumstances of each maritime incident. In contrast, the offshore petroleum regime requires that all pollution response arrangements for a petroleum activity, including dispersants, must be accepted by NOPSEMA prior to an activity commencing.

The environment plan submission process is the mechanism for offshore petroleum titleholders to gain acceptance for the use of location, activity or oil pollution emergency plan specific oil spill dispersant products and deployment strategies (e.g. surface and/or subsurface application) prior to a pollution incident. This provides a titleholder with the ability to identify the most appropriate dispersant options to match its environmental risks and response requirements, including new and improved formulations that may not always be listed on the OSCA register. Titleholders are required to demonstrate that the environmental impacts and risks of any proposed dispersant use will be reduced to as low as reasonably practicable (ALARP) and of an acceptable level in an offshore pollution incident.

To read NOPSEMA and AMSA’s dispersant explanatory note see the Oil Pollution Risks page under the Environment tab at nopsema.gov.au.
Marking of emergency-use attachment points and lifting equipment

In recent facility inspections, NOPSEMA inspectors have found that some permanent attachment points and other lifting equipment used in emergencies are not being subject to regular inspection or testing.

Permanent attachment points, such as davits and pad-eyes with shackles or master links, are routinely used as lifting equipment in emergency-response, for example casualty extraction. They are typically found at the top of engine and pump room emergency escape tunnels. Other emergency-response arrangements including ‘donut’ descent type arrangements and attachment points on a MODU derrick are often exposed to conditions causing deterioration.

It is good practice to implement a colour-coding system, along with a tag number and safe working load (SWL) markings. This practice indicates that the lifting equipment and permanent attachment points have been appropriately tested and/or inspected within a specified time period, typically six months. This practice is also supported by a number of international standards and codes of practice, including the International Association of Oil and Gas Producers ‘Lifting and Hoisting Safety Recommended Practice 2006’, NORSOK standard R-003:2014 and Canadian Association of Petroleum Producers Standard Practice 2013-0012 ‘Safe Lifting Practice’.

During recent planned facility inspections, NOPSEMA inspectors identified that some permanent attachment points and other lifting equipment were not being managed under a colour-coding system with relevant markings, or were not subject to regular inspection or testing. Some equipment was also found in poor condition.

When permanent attachment points and other lifting equipment are not tagged with a colour-code, or otherwise marked, members of the workforce cannot be certain that the equipment is safe to use and that the necessary thorough examinations have taken place. This certainty is important because in an emergency situation there may not be time or competent personnel available to conduct this verification.

Operators are advised that they should review their integrity assurance management system for permanent attachment points and other lifting equipment at their facilities. Such reviews will ensure that all lifting equipment and associated attachment points intended for emergency-use are maintained and fit-for-purpose, and tagged or marked accordingly.

Clause 9(2)(e) of Schedule 3 of the OPGGS Act requires that operators take all reasonably practicable steps to maintain equipment for responding to emergencies. NOPSEMA inspectors will continue to check the fitness of facility emergency response and evacuation equipment during inspections and enforcement action will be considered where operators are unable to demonstrate an adequate assurance program.
Amended Wells Regulations


The amendments follow a review of the Wells Regulations conducted by the Department of Industry, Innovation and Science (formerly the Department of Industry and Science) as part of the Australian Government’s implementation of the Final Government Response to the Report of the Montara Commission of Inquiry. Details about the review are described in further detail at industry.gov.au.

The changes to Part 5 of the Wells Regulations include new content requirements for well operations management plans (WOMPs). The new requirements reflect the expanded scope and nature of the WOMP as the sole permissioning document for wells and well activities across the entire well life from design to abandonment. The requirement for individual well activity approvals is replaced with a well activity notification scheme.

NOPSEMA will publish guidance in due course to assist titleholders to comply with the amended regulations. The amended regulations take effect from 1 January 2016 and are available at comlaw.gov.au.
New human factors guidance

Recently, NOPSEMA published two information papers as part of a long-term project to provide information on human factors topics relevant to the offshore petroleum industry. The papers address the integration of human factors into engineering and design processes, and the reduction of error risk to as low as reasonably practicable (ALARP).

The information paper entitled ‘Human factors in engineering and design’ promotes the concept of error tolerant design. Effective integration of human factors principles throughout the design and engineering of new or modified facilities represents one of the most efficient methods of preventing human error and mitigating its consequences. Within an offshore petroleum environment, error tolerant design can contribute to a reduction in the likelihood and consequence of hazardous events across the life of a facility.

Furthermore, the ‘Human error risk reduction to ALARP’ information paper seeks to facilitate continuous improvement in error risk management throughout the offshore petroleum industry. It outlines a suggested approach to error risk management, with the intention of improving the rigour with which error risk is identified and controlled in relation to major accident event prevention. The suggested approach demonstrates how error risk can be managed using the same basic frameworks and models as traditional risk management approaches, whereby error risk can be evaluated and controls implemented until the risk posed by error is ALARP.

To access the information papers see the Human Factors Information Papers page under the Resources tab at nopsema.gov.au.
NOPSEMA’s investigation into whale stranding events

Cooperation between the Commonwealth Department of the Environment, relevant South Australian government departments and industry has assisted NOPSEMA in completing its investigation into various whales stranding events that occurred in late 2014 and early 2015.

In December 2014, NOPSEMA was informed of a whale stranding event on Parara Beach in South Australia involving eight sperm whales. In February 2015, NOPSEMA was also alerted by the Department of the Environment to another stranding event involving two beaked whales near Donnington South Australia. Further discussions with the South Australian Museum confirmed that a third beaked whale had stranded on the York Peninsular in late January 2015. In response to these events, NOPSEMA conducted an investigation to determine if there were any cause-effect links between the stranding events and any petroleum activities occurring in adjacent Commonwealth waters.

Information and advice was sought from relevant state and federal government agencies, the South Australian Museum and the petroleum industry. The South Australian Museum provided information regarding the results of necropsies conducted from some of the stranded whales. Furthermore, companies who were conducting seismic surveys around the time of the stranding events provided NOPSEMA with marine fauna observations, along with the dates and locations of seismic acquisitions.

From the information obtained during the investigation, no evidence was found to suggest there was a likely correlation between offshore petroleum activities undertaken in the region and the standings. The matter will be reconsidered should more information become available. NOPSEMA would like to recognise the collaboration efforts of all parties involved in the investigation process.
Design and performance verification of facility emergency shut-down and blow-down systems has been a priority for process safety management since the Piper Alpha tragedy which claimed the lives of 167 people in 1988.

A major accident event, such as a hydrocarbon release leading to fire and explosion, resulting from a loss of containment of hydrocarbons from, for example, risers or topsides process plant requires emergency shut-down and depressurisation (blow-down) systems. These systems act as technical controls to mitigate the consequences of the event.

Planned inspections conducted by NOPSEMA over the past three years have shown that many operators have comprehensive systems in place for monitoring performance of their emergency shut-down and blow-down valves and are continuously improving. Some examples of good practice include:

- Performance standard assurance plans that establish links between identified technical controls and associated major accident events.
- Testing, inspection, monitoring and maintenance conducted at a frequency determined by a recognised industry standard.
- Risk-based assessments conducted in accordance with associated performance criteria.
- Procedures, performance standards, results and records associated with maintenance activities are embedded in the maintenance system.
- Ensuring that emergency shut-down valve performance is ascertained on the valve’s ‘as found’ condition prior to performing maintenance.
- Leak test work orders referencing specific leak test criteria, which are referenced to industry-recognised codes and standards for the emergency shut-down system.
- Ensuring supervisors and personnel working with emergency shut-down and blow-down valves have good knowledge of the system, are adequately trained, and, have experience relevant to the operation, maintenance and assurance of the emergency shut-down systems.
- Regular monitoring of the degradation of valve performance over time to facilitate preventative, rather than reactive maintenance.
- Facility-specific independent auditing or performance verification of emergency shut-down and blow-down valves and the associated maintenance management systems.

NOPSEMA inspectors also found that operators commonly have systems in place to notify and report failures of emergency shut-down and blow-down valves (to meet performance standards) to NOPSEMA as a ‘dangerous occurrence’.

Over the same period, NOPSEMA has issued 48 recommendations and four improvement notices to operators across 21 facilities. The majority of these recommendations and enforcement actions related to deficiencies in the implementation of functional assurance plans for emergency shut-down and blow-down systems, and for the operators failure to meet relevant performance standards.

As of 1 October 2014, improvement notices have been published on NOPSEMA’s website as part of a concerted effort to provide greater transparency in relation to NOPSEMA’s enforcement processes and, to allow for associated learnings to be shared among industry.

Operators of facilities are reminded to take all reasonably practicable steps to implement and maintain appropriate procedures and equipment for the control of and, response to emergencies at the facility in accordance with Clause 9(2)(e) of Schedule 3 to the OPGGS Act.
Data reports and statistics

NOPSEMA continuously collects and receives data on the safety, well integrity and environmental management performance of the offshore petroleum industry, as well as its own regulatory performance. This data is regularly analysed and converted into a series of datasets. The latest datasets are published both quarterly and annually under the 'Resources' tab at nopsema.gov.au. They contain many familiar performance indicators such as incident rates, injury rates, hydrocarbon releases and international benchmarks.

Schedule of events

Events listed below are those at which NOPSEMA is presenting or exhibiting or has an organisational role.


Feedback

NOPSEMA welcomes your comments and suggestions. Please direct media enquiries, requests for publications, and enquiries about NOPSEMA events to communications@nopsema.gov.au. Operators and other employers are encouraged to circulate this newsletter to their workforce. Past issues of this newsletter are available at nopsema.gov.au.

Subscribe

NOPSEMA has recently expanded its online subscription service. To receive the latest news and developments from Australia’s national regulator for the oil and gas industry please complete the online subscription form. NOPSEMA’s services include news and information on environmental management, well integrity, HSRs, media releases, safety alerts and the Regulator newsletter.

The information provided in this publication is intended to provide general information and guidance only and should not be treated as a substitute for professional advice. Please read NOPSEMA’s disclaimer.