

THE REGULATOR

2021 - Issue 3



Preventing major accident events

NOPSEMA expects the day-to-day safety of the workforce to be at the forefront of all operations.



NOPSEMA
Australia's offshore energy regulator

About **NOPSEMA**

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is Australia's independent expert regulator for health and safety, environmental management, structural and well integrity for offshore petroleum facilities and greenhouse gas storage activities in Commonwealth waters.

By law, offshore petroleum and greenhouse storage activities cannot begin before NOPSEMA has assessed and accepted the required permissioning documents demonstrating how the activity will be undertaken to reduce risks to the health and safety of the workforce and the environment to as low as reasonably practicable (ALARP) and environmental impacts to an acceptable level.

For more information, visit our website at nopsema.gov.au.

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Strategic
compliance
focus areas for
2021

**PREVENTING MAJOR
ACCIDENT EVENTS**

**PREVENTING LOSS OF
WELL CONTROL**

**EFFECTIVE OIL POLLUTION
EMERGENCY PREPAREDNESS**

**RESPONSIBLE ASSET
STEWARDSHIP**

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Message from the Chief Executive

In this issue of the Regulator, we highlight NOPSEMA's strategic compliance focus on the prevention of major accident events (MAEs) and the importance of ensuring duty holders are taking all reasonably practicable steps to protect the health and safety of the workforce and minimise the environmental impact of their offshore operations.

Preventing MAEs requires safety to be understood and accepted as the number one priority at every stage of a project, and at every level of an organisation.

Accident prevention should be central to the way facilities are designed and operated. The facility safety case should be easily accessible and widely understood so that everyone is aware of actions required

to support safe operations, particularly in the event of an emergency.

The COVID-19 pandemic has reminded us of the importance of vigilance, the need to expect the unexpected, and to remain alert to changes in risk and the emergence of new risks. NOPSEMA recognises that getting the job done right during this unprecedented period of change is challenging, particularly when combined with cost pressures.

I encourage duty holders to consider whether the systems they have in place are sufficiently robust, whether the expertise of the workforce is being maintained to identify and reduce new and emerging risks, and whether the decisions being made today are reducing the risk of a MAE to as low as reasonably practicable.

We know that top-level leadership commitment to safety makes a substantial difference in building the positive process safety cultures necessary to prevent MAEs. A facility's safety culture is frequently identified as a contributing factor to MAEs.

Duty holders may be challenged in balancing the management of immediate safety issues with long-term issues around environment. In our view, focusing on preventing MAEs may reduce this tension because many of the measures required to ensure the safety of the workforce, such as blowout prevention, are equally effective at protecting the environment. This view does not, of course, negate the need to take seriously those aspects of operational planning that exist primarily to protect the environment.

Communication and collaboration within the industry is essential. Experience tells us that the lessons learned from incidents are retained by those who were involved or close to the incident at the time. When those people move on, they take the experience with them. Sharing knowledge and experience widely among industry in collaborative forums can help develop systems and strategies that reflect best practice.

Getting the job done right also applies to the regulator. Crucial to achieving this, and maintaining community confidence in the regulatory regime, is ensuring rigour in our approach. NOPSEMA's approach to its assessments, compliance monitoring and enforcement

activities seeks to be characterised by independence, professionalism, and respect for due process, reinforced by a commitment to promotion and advisory activities.

I believe the regulatory regime administered by NOPSEMA leads to strong safety and environmental outcomes evidenced by a good track record. The regime is premised on continuous improvement, so it would be unwise to think that this same premise doesn't apply to the regime itself. This is why NOPSEMA continues to advocate for and support proposed amendments that seek to improve safety and environmental outcomes, such as the introduction of a design notification scheme.

While the offshore environment is inherently high risk, the offshore workforce deserves the safest working conditions that can reasonably be obtained. In an industry that has seen the tragic consequences of MAEs, NOPSEMA is committed to ensuring duty holders are complying with their legislative responsibilities to protect the workforce and environment.

Stuart Smith
Chief Executive Officer



Preventing major accident events

NOPSEMA expects the day-to-day safety of the workforce to be at the forefront of all operations. A crucial aspect of safe operations is recognising the importance of process safety and its focus on preventing major accident events (MAEs).

The Piper Alpha disaster in the North Sea in 1988 remains the world's deadliest offshore petroleum MAE, killing 167 workers. It led to a sea change in offshore safety which shaped the industry and regulatory regime in many parts of the world, including Australia.

The probability of a MAE is extremely low, however, history has taught us that when they do happen, the consequences are catastrophic. Given the relative rarity of a MAE, operators may become complacent, and prevention can wane and receive less attention as focus is directed to the management of day-to-day operational issues.

More recent MAEs including the Petrobras P36, Mumbai High, Montara, and Macondo disasters demonstrate the importance of operators remaining vigilant and taking all the necessary steps to plan for and prevent a MAE.

NOPSEMA's role in the prevention of MAEs is frequently highlighted as our regulatory activities (assessment, compliance monitoring, enforcement, promotion and advice) continue to identify situations where inadequate or failed barriers and systems are likely to lead to a MAE.

A basic tenet of the objective-based regulatory regime administered by NOPSEMA is the premise that the ongoing management of safety is the responsibility of the operator. This allocation of responsibility recognises that the operator should have the knowledge, decision-making authority, on the ground control and resources to ensure the risks they create are appropriately managed.

What this means practically is that the operator must continually identify and assess all MAE risks and implement control measures to continually reduce those risks to as low as reasonably practicable (ALARP). This must be demonstrated to NOPSEMA in a safety case.

A safety case should have a coherent, integrated overall structure containing a facility description, a formal safety assessment and a description of the safety management system. There should be a logical flow to the process to create strong links between the causes and consequences of MAEs, their associated risks, the selection of strategies and measures to control the risks, and the performance required from specific measures to maintain risk levels to ALARP. It does this by applying control barriers.

All barriers associated with preventing or mitigating MAEs are identified as safety critical elements, and as such must be continually maintained and tested against pre-defined performance standards to ensure they remain fit-for-purpose.

NOPSEMA recognises that assessment and compliance monitoring, which focus on individual facilities and activities, can be limited in preventing a potential MAE. That is why NOPSEMA employs experienced personnel to identify trends and establish valuable insights.

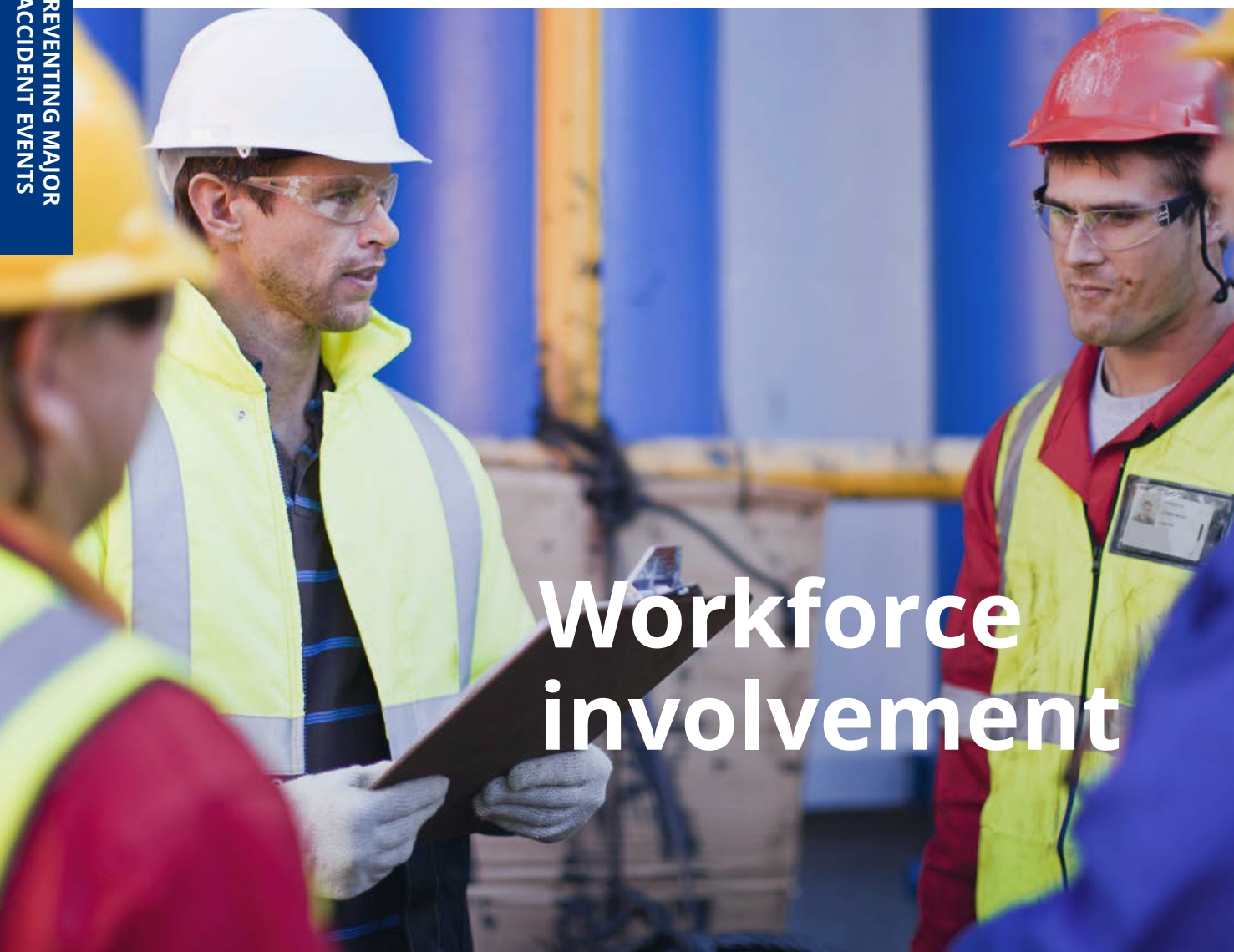
This work has resulted in NOPSEMA establishing four strategic compliance focus areas, of which the prevention of MAEs is one. Improvement programs under this focus area currently target human factors, maintenance management, and safety management systems.

A safety management system that prevents MAEs requires a robust and well managed process safety management framework that is based on industry good practice and subject to continuous improvement.

As an example, the Energy Institute has developed a process safety management framework, in collaboration with industry, setting out twenty elements of process safety to reduce MAE risks. The framework isn't intended to replace existing safety management systems, rather provide a benchmark for good practice.

Good practice in the prevention of MAEs is driven by a high standard of leadership that is committed to promoting a positive safety culture that informs and involves the whole workforce in the identification, assessment, and management of MAE risk.

In this issue of The Regulator, NOPSEMA has looked in greater detail at the process safety elements of leadership, workforce involvement and management of change. In future issues, we will seek to highlight more good practice process safety elements in the prevention of MAEs.



Workforce involvement

NOPSEMA sees the participation of the workforce as a central element of health and safety management on any facility.

While the facility operator is responsible for ensuring the health and safety of the workforce, and the preparation of the facility's safety case, the workforce must be informed of the risks they may be exposed to, and the control measures put in place to protect them.

The workforce must be consulted and invited to participate in the development of the facility's safety case. They must also have access to, and understanding of, the safety case so they know what actions to take to support safe operations.

NOPSEMA's inspection process places considerable emphasis on involving the workforce, for example, opening and close out meetings generally include the participation of Health and Safety Representatives (HSRs).

These meetings are valuable in that they can identify specific issues that warrant attention and can also provide an insight into the prevailing culture and attitudes on-board which may be instrumental in revealing deeper issues.

HSRs are provided powers and protections under the Offshore Petroleum and Greenhouse Gas Storage Act 2006. Once selected, HSRs can exercise their powers immediately.

If you need someone to talk to, call:



- Lifeline on **13 11 14**
- Beyond Blue on **1300 22 46 36**
- Mensline Australia on **1300 789 978**
- Headspace on **1800 650 890**
- Suicide Call Back Service on **1300 659 467**
- Qlife on **1800 184 527**

The role of the HSR in facilitating workforce involvement is important. The HSR represents their fellow workers by raising their health and safety concerns with facility management and assisting them in participating in the decisions that will affect them.

NOPSEMA recently accredited a one-day HSR course for current HSRs seeking to refresh their knowledge. For more see ifap.asn.au.

Recently, NOPSEMA was pleased to participate in the Health, Safety, Environment Representative (HSER) Forum hosted by Safer Together in Perth, Western Australia. HSER's take on environmental responsibilities in addition to the those of a HSR.

At the forum, many HSERs took the opportunity to come to NOPSEMA's booth to ask questions and chat to our team of Occupational Health & Safety Regulatory Specialists, and to pick up a copy of NOPSEMA's HSR Handbook.

NOPSEMA also seeks to engage more broadly with organisations that represent the interests of the workforce. This includes regular meetings with relevant unions and industry groups to gain insight and understand concerns.

As a result of the COVID pandemic and related travel restrictions, NOPSEMA recognises that many workers are now spending time in isolation, working longer swing patterns and dealing with extended separations from loved ones. This may lead to psychological distress or injury which may contribute to accidents or dangerous occurrences, and an overall mentally unhealthy workplace.

NOPSEMA supports the Australian Government's proposed amendments to the safety regulatory framework to better support the overall wellbeing of the offshore workforce and to formalise the concept of health as comprising both physical and mental aspects.

NOPSEMA views psychosocial hazards as a health and safety risk that must be managed to a level that is as low as reasonably practicable. NOPSEMA has developed guidance to assist duty holders in reducing psychosocial risk. The guidance is now open for comment on NOPSEMA's website.

Safe isolation of plant and equipment

Failures during isolation and reinstatement of plant and equipment are a significant cause of loss of containment incidents and potential major accident events.

The safe isolation of plant and equipment is essential to offshore oil and gas operations because it allows various processes to take place, such as cleaning, maintenance, repair, and modification.

Recently, NOPSEMA took enforcement action against a dutyholder following multiple isolation incidents on a facility.

NOPSEMA determined that the risks associated with conducting intrusive activities at the facility were not being reduced to as low as reasonably practicable and there was a significant risk to the health and safety of persons at the facility.

Operators are reminded of their duty to take all reasonably practicable steps to ensure that any plant, equipment, materials, and substances at the facility are safe and without risk to health.

The most effective way to achieve safe and effective isolation of plant and equipment, without creating unnecessary constraints on plant operation, is good initial design of plant and equipment.

NOPSEMA supports the Australian Government's proposed amendments to the safety regulatory framework that will require proponents to engage with, and submit design concept details to, NOPSEMA for new production facilities.

Safe isolation also depends on the arrangements within a robust safety management system, including work control systems (especially permit-to-work), operating procedures, training and competence, management of change and contingency plans.

NOPSEMA recommends that operators review their safety management systems in relation to the safe isolation of plant and equipment to identify any gaps with industry good practice, such as described in HSE UK Guidance 'Safe Isolation of Plant and Equipment', HSG253.



Enforcing decommissioning obligations

In August, NOPSEMA issued four general directions to BHP and Cooper Energy to undertake decommissioning activities in respect of the Griffin, Minerva, Stybarrow and Basker Manta Gummy fields.

In all instances the titleholders had not shown sufficient planning for, or undertaking of, decommissioning activities, increasing the complexity, safety and environmental risks, and potentially impacting removal outcomes for decommissioning.

The directions set clear timeframes for plugging and abandoning wells, removing property and equipment, protecting natural resources, and making good any damage to the seabed.

The directions also require property and equipment to be maintained in good condition and repair so that it may be safely removed or, where NOPSEMA approves an alternative solution such as repurposing, remain on location.

NOPSEMA's approach to enforcing decommissioning obligations is outlined in our decommissioning Compliance strategy and Compliance plan.

Directions have been issued previously for the decommissioning of Eni's Woollybutt and Woodside's Enfield assets, and to Exxon Mobil (Esso) for multiple non-producing facilities in the Bass Strait.

NOPSEMA will continue to engage with the duty holders we have identified as requiring regulatory oversight to discuss compliance with decommissioning obligations.

NOPSEMA supports the legislative and regulatory change being considered through the enhanced decommissioning framework developed by the Department of Industry, Science, Energy and Resources.

The first stage of the framework's implementation has been achieved with a series of amendments, including trailing liability, passing through Parliament and set to come into effect in early 2022.

Inspection policy out for comment

From 1 January 2022, NOPSEMA is adopting a new approach to its inspections, striking a balance between undertaking regular inspections of all facilities and activities with more frequent inspections of facilities and activities posing a higher risk or likelihood of non-compliance.

The frequency and focus of NOPSEMA's inspections will be driven by the inherent and emerging risks to people, the environment, well integrity and compliance. A duty holder's compliance history, attitude, and behaviour will also be considered in addition to strategic factors, external pressures, and latent risks.

To assist the industry in understanding NOPSEMA's new approach, and what to expect, a revised inspection policy has been published for comment on NOPSEMA's website. Interested stakeholders are encouraged to review the policy and provide comment by no later than COB Tuesday, 26 October.

The policy sets out a baseline, or minimum frequency for inspections. It also lists a variety of risk-factors that will drive more frequent inspections, such as the complexity of the activity and the stage of life of the asset.

The policy also reinforces the provision of formal conclusions in NOPSEMA's inspection reports. Conclusions aim to ensure NOPSEMA's findings and observations are communicated more clearly.

Duty holders will continue to be accountable for managing the risks that they create and must address any issues or non-compliance identified through a NOPSEMA inspection in a timely manner.

Where an inspection conclusion relates to a non-compliance, and NOPSEMA is reasonably satisfied the duty holder can and will address the matter in a timely manner without NOPSEMA's intervention, then NOPSEMA will request details from the duty holder about the actions that have or will be taken to address the non-compliance.

Where an inspection conclusion relates to serious non-compliance, immediate threat, or significant risk, it is NOPSEMA's policy to consider enforcement action. If appropriate, inspection recommendations will be provided to support improved safety outcomes.

In the next issue of The Regulator, NOPSEMA will provide more information on what to expect from a NOPSEMA inspection in 2022.

Leadership, commitment, and responsibility

NOPSEMA is implementing a program where we collect and review information relating to the degree to which senior executives and boards have sufficient oversight of, and accountability for, the control of major accident hazards.

Research in high hazard industries such as oil and gas reinforce the substantial influence incentivised target-setting and organisational reporting lines have on the proper identification, reporting and oversight of safety and environmental risks.

NOPSEMA expects senior executives and, where relevant, their boards to have oversight of the safety and environmental risks to their facilities and activities, to be capable of understanding the risks and to be accountable for ensuring controls are in place to effectively manage the risks.

Most importantly, NOPSEMA expects senior executives to manage the long-term low-likelihood, but high consequence risks to their facilities, in addition to any other operating or financial performance required.

Through its compliance monitoring activities, NOPSEMA has identified issues within the industry at an operational level that may have roots at the executive level. For example

- decisions made prioritising projects that will increase production over routine or campaign maintenance activities leading to unacceptable levels of corrosion and degradation

- management of change processes routinely misused to manage risks to the company rather than risks to the workforce and environment
- failure to address NOPSEMA's inspection findings until faced with the prospect of escalated enforcement action
- significant job or operating budget cuts without due regard for work re-prioritisation, deferred maintenance, OHS and process safety
- workforce reluctance to raise safety issues or 'stop the job' over safety concerns
- lack of support for the Health and Safety Representative role
- increase in workforce mental health related issues.

The examples above are potential symptoms of organisational structures and incentive systems that prioritise the mitigation of financial risk over safety and environmental risk.

NOPSEMA plans to review corporate scorecards and target setting for key personnel, transparency and visibility to senior management of relevant performance indicators, and the status of internal governance and oversight of operations responsible for safety and environmental management. Results from these reviews will be shared with company Chief Executives or equivalents and responses sought.



Misuse of management of change

NOPSEMA is concerned duty holders may be failing to properly manage change following several instances where the management of change (MoC) process was used to justify deviations from accepted permissioning documents without regard for the increase in risk.

NOPSEMA recognises that it may be appropriate for duty holders to use the MoC process to facilitate temporary change, where equivalent or better controls, and/or alternative ways of working are put into place in the interim.

It is important for duty holders to ensure that any change implemented through the MoC process continues to reduce safety and environment risks to as low as reasonably practicable and environmental impacts to an acceptable level.

Duty holders should also consider if any change in risk will impact on other regulatory requirements, such as the requirement to submit a revised permissioning document to NOPSEMA for assessment and acceptance.

NOPSEMA has identified instances where duty holders have used the MoC process to justify a significant deviation from their accepted permissioning document and/or implement a change without adequately considering the increase in risk. For example:

- Rather than fix a leak in the hydraulic system designed to operate a subsea isolation valve on a gas flowline, an operator used the MoC process to bypass the hydraulic control system and lock the valve in the open position rendering the valve incapable of functioning as intended.
- An operator used the MoC process to defer maintenance and replacement of the passive fire protection on a hydrocarbon pressure vessel, stating it was not safety critical. However, the fire protection had already degraded to such a point that it couldn't provide the necessary protection in a fire scenario.

In each of these examples, NOPSEMA determined that the changes implemented resulted in a significant increase in risk to the health and safety of the workforce. NOPSEMA took compliance action by requiring each operator to ensure the risk was adequately addressed. This resulted in both operators reversing the changes they had implemented.

A failure to properly manage change can significantly increase the risk of major accident event. NOPSEMA is committed to addressing the issue by using the full range of its regulatory powers and, where necessary, to test the boundaries of the legislation to ensure the protection of the workforce and environment.

Recently, the Department of Industry, Science, Energy and Resources (DISER) published an Offshore Oil and Gas Safety Review policy framework where it referred to instances where operators used their MoC process to address the loss of safety-critical controls without understanding the increase in risk.

NOPSEMA supports DISER's proposed amendments to the safety regulatory framework that will require operators to identify and document control measures, which if lost or removed, will then require a revision to the accepted safety case. The revision must justify to NOPSEMA that risks have been identified and adequately controlled before any change can take place.

The amendments will assist in removing any ambiguity around when a revision to an accepted safety case is required and when the MoC process can be used. The proposed introduction of a civil penalty regime will also provide a disincentive to non-compliance.

If duty holders are unsure about whether a proposed change can be implemented using the MoC process or if a revision to the accepted permissioning document is required, NOPSEMA strongly recommends you contact your facility's focal point inspector for guidance.

Deferred maintenance: a major industry challenge?

Timely and appropriate maintenance, particularly for safety-critical equipment, is a key safety control measure in the prevention of harm and the protection of the environment. NOPSEMA recognises that, at times, to balance unexpected and competing operational priorities operators need to defer certain maintenance activities.

These deferrals may be acceptable when done for a short period of time, where engineering or procedural processes are not feasible, and risks continue to be reduced to a level that is as low as reasonably practicable (ALARP).

The deferrals are not acceptable when plant and equipment is left to deteriorate to a point where it becomes a risk to the safety of the workforce, hazardous to the environment, or it can no longer be safely removed.

Timely and appropriate maintenance is of particular importance given more than half of all offshore production facilities in Australian waters are more than 20 years old, and some exceed 50 years.

In early 2020, the industry sought to respond to the COVID-19 pandemic while managing the effects of sustained low oil prices. At the time, NOPSEMA raised concerns about the number of maintenance activities being deferred and the impact that would have on the level of risk.

NOPSEMA began monitoring the application of maintenance management by operators more closely to ensure planned maintenance was carried out within an acceptable timeframe. This monitoring confirmed that the deferral of maintenance activities is a key compliance issue.

Where deferring maintenance may be necessary, operators should have an effective strategy in place to track all the deferred maintenance activities and report each activity against its deferral key performance indicator (KPI). Operators should then assess the risk of each deferral and prioritise the highest risk for maintenance.

Where maintenance cannot be completed against set deferral KPIs, operators should implement mitigating actions, such as reducing other activities, to ensure the facility remains safe and without risk to the health and safety of the workforce.

Currently, NOPSEMA is assessing the results of an industry-wide survey on deferred maintenance. The survey findings will be shared with industry for discussion and promotion of good practice. In the interim, operators are reminded of their duty to take all reasonably practicable steps to ensure the facility is safe and without risk to the health of any person at or near it.

NOPSEMA expects that operators will review all their deferred maintenance activities to ensure risks, particularly MAE risks, continue to be reduced to ALARP.





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

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