

WA Economics and Industry Standing Committee – Inquiry into the Economic Implications of FLNG

Overview of National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

NOPSEMA is an independent Commonwealth Statutory Authority regulating the health and safety, well integrity and environmental management of offshore petroleum industry activities in Commonwealth waters, and in coastal waters where state and Northern Territory functions have been conferred.

NOPSEMA commenced operations on 1 January 2012, continuing the existence of the National Offshore Petroleum Safety Authority (NOPSA) following the [Final Government Response to the Report of the Montara Commission of Inquiry](#) and a decision to extend the remit of NOPSA to include regulatory functions and responsibilities for environmental management.

Jurisdiction

NOPSEMA regulates health and safety, well integrity and environmental management for all offshore petroleum facilities and activities in Commonwealth waters, as well as designated coastal waters where legislated functions have been. Jurisdictions where functions have not been conferred remain the responsibility of the relevant state or Northern Territory (NT).

Legislated functions

The details of NOPSEMA's legislated functions as Australia's national offshore petroleum regulator are specified in section 646 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act). The functions are outlined as follows:

- to promote the OHS of persons engaged in offshore petroleum operations or offshore greenhouse gas storage operations
- to develop and implement effective monitoring and enforcement strategies to ensure compliance under the OPGGS Act and Regulations
- to investigate accidents, occurrences and circumstances relating to OHS, well integrity and environmental management
- to advise on matters relating to OHS, well integrity and environmental management
- to make reports, including recommendations, to the responsible Commonwealth minister and each responsible state/Northern Territory (NT) minister
- to cooperate with other Commonwealth and state/NT agencies or authorities having functions relating to regulated operations.

The Australian offshore regime is objective or performance-based, which means:

- the operator of an offshore facility is responsible for the safe operation of the petroleum facility
- the onus is placed on the industry to ensure and demonstrate to regulators that risks relating to oil and gas operations are reduced to 'as low as reasonably practicable' (ALARP).

Under the OPGGS Act, an operator must demonstrate to NOPSEMA, and NOPSEMA must assess and accept, that the operator has reduced the risks to safety to a level that is ALARP and, for environmental impacts, acceptable in order for the operator to commence a petroleum activity.

Objective-based regulation is recognised as international regulatory best practice:

- those that create the risk – the operators – are held to account for managing that risk
- risk management can be tailored to the impacts and risks unique to a petroleum activity
- it provides flexibility for the offshore industry to implement advanced technologies to drive continuous improvement in health and safety and environmental performance.

Details of NOPSEMA’s strategies and key performance indicators relating to performing these functions can be found in the authority’s Corporate Plan 1 July 2012 – 30 June 2015. Governance and funding

Governance and funding

NOPSEMA is a Commonwealth independent statutory agency headed by a Chief Executive Officer appointed by the responsible Commonwealth Minister. The NOPSEMA Board provides advice and recommendations to the NOPSEMA Chief Executive Officer and Minister about operational policies to be followed by the Authority.

NOPSEMA is funded on a full cost recovery basis via levies on industry. NOPSEMA does not have any legislated functions with respect to resource management or titles allocation.

Regulatory activities

NOPSEMA regulates offshore petroleum safety, well integrity and environmental management under the functions and powers conferred on it under the OPGGS Act, OPGGS (Safety) Regulations 2009, Part 5 of the OPGGS (Resources Management and Administration) Regulations 2011 and the OPGGS (Environment) Regulations 2009. NOPSEMA does not have a legislative drafting function. This function is performed by the Department of Industry.

By law, offshore petroleum activities cannot commence before NOPSEMA has assessed and accepted the detailed risk management plan (e.g. the Safety Case or Environment Plan) documenting and demonstrating how an organisation will manage the risks to health and safety or the environmental impacts of an offshore petroleum activity to a level that is as low as reasonably practicable and acceptable. These documents must also address incident response and preparedness.

NOPSEMA conducts inspections to monitor operators’ compliance with their duties as required by the legislation and their implementation of the risk management systems described in their accepted regulatory submissions. NOPSEMA may issue recommendations to operators or take enforcement action as appropriate based on the findings from inspections.

NOPSEMA investigates accidents, dangerous occurrences, reportable environmental incidents and relevant complaints to identify breaches of the offshore safety and environmental management legislation and to share key lessons with industry. Where organisations are found to be in breach of the legislation, NOPSEMA takes action to enforce return to compliance.

NOPSEMA interacts with multiple stakeholder groups in the performance of its legislated functions to provide advice on and to promote safety, well integrity and environmental management. NOPSEMA publishes regulatory guidance, information about its role, jurisdiction and functions, presentations and technical research on its website nopsema.gov.au

Responses to questions put to NOPSEMA

Please note that in the responses below reference to NOPSEMA's published documents means the documents are published and freely available on the NOPSEMA website www.nopsema.gov.au.

Question 1

What processes are involved for environmental and safety approvals, including consent to operate for FLNG?

The relevant legislation, administered by NOPSEMA, is the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 [Safety Regulations] and Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 [Environment Regulations]. These regulations provide for the submission of a safety case to NOPSEMA by the operator of a facility for one or more stages in the life of the facility and for the submission of an environment plan by an activity operator for one or more environment activities. NOPSEMA assesses such submissions against the criteria contained in the regulations and makes a decision to accept or reject them. Acceptance of such documents by NOPSEMA provides the operator with permission to undertake the activities described therein, in accordance with the document, hence the term "permissioning document".

(See NOPSEMA's published Safety Case in Context - An Overview of the Safety Case Regime Guidance Note N-04300-GN0060 and Environment Plan Contents Guidance Note N-04700-GN1074 for more information)

For example, will staged approvals be utilised?

To the extent the development of a petroleum field typically involves a range of activities and facilities; it is common for a number of safety cases and environment plans (or revisions thereof) to be submitted to NOPSEMA over time, encompassing various stages in the life of the facilities and activities.

(See NOPSEMA's published Safety Case Lifecycle Management Guidance Note N-04300-GN0087 and Environment Plan Contents Guidance Note N-04700-GN1074 for more information)

Will there be design, construction, installation, and operational safety cases?

The Safety Regulations provide for the construction, installation, operation, operation, modification and decommissioning stages in the life of a facility. A safety case can address one or more of these stages. It is a matter for the operator of the facility to decide which stage(s) are incorporated into a given safety case.

(See NOPSEMA's published Safety Case Lifecycle Management Guidance Note N-04300-GN0087 for more information)

What inspection of facilities will be required?

NOPSEMA conducts planned inspections at facilities that may involve some or all of the following activities:

- confirming that the hardware and procedural systems described in the permissioning documents are in place;
- obtaining evidence that such systems are functional in practice;
- gaining assurance that the implementation of the systems will be ongoing;
- verifying that risk control improvements have been implemented;
- verifying that actions arising from recommendations of previous inspections have been completed;
- testing personnel knowledge and understanding of selected aspects of the permissioning documents and supporting documentation as relevant; and
- Communication with Health and Safety Representatives and the workforce.

All inspections are undertaken in an informed, risk-based and consistent manner. For example NOPSEMA's risk-based inspection planning has established the following targets for OHS inspection frequency:

- Normally attended production facilities and Mobile Offshore Drilling Units (MODUs)– twice per year;
- Diving operations, Multi-purpose vessels, Normally unattended facilities – on an opportunistic basis;
- Pipelines or subsea facilities with high probability of people being at or near the pipeline or subsea facility – Once per two years;
- Pipelines or subsea facilities with medium to low probability of people being at or near pipeline or subsea facility – Once per four years; and
- Mobile facilities operating in Australian Commonwealth Waters for the first time; within six weeks of the commencement of operations for non-drilling facilities, and three weeks for drilling facilities, where practical.

(See NOPSEMA's published OHS Planned Inspection Policy N-02000-PL0025 and Environmental Management Inspection Policy N-02200-PL0973 for further information)

NOPSEMA notes that in 2012 it conducted 99 inspections relating to a total of 156 facilities, title wells and petroleum activities with 96 inspections having been completed in the first three quarters of 2013.

(See NOPSEMA's published Annual Offshore performance reports for further information)

Will validation of design and construction be required?

In accordance with Safety Regulation 2.40 and NOPSEMA's published validation policy; NOPSEMA shall request a validation in respect of all proposed facilities and all significant changes to a facility. In this context, validation means:

A process undertaken by an independent competent party, namely the validator, to provide assurance that the design, construction and installation of safety-critical systems incorporate measures that will protect the health and safety of persons at or near the facility, and (in the case of a proposed facility) are consistent with the formal safety assessment for the facility. The validation is a statement in writing by the validator in respect to the design, construction and installation (including instrumentation, process layout and process control systems) of a proposed facility, or significant change to an existing facility, to the extent required by the scope of validation agreed between NOPSEMA and the operator.

(See NOPSEMA's published Validation Policy N-04200-PL0286 and associated Guideline N-04200-GL0525 for further information).

Question 2

Given that Shell's Prelude facility will be the first FLNG operations in the world, what safety and environmental benchmarks or standards is NOPSEMA using to assess FLNG safety cases and environment plans?

The fundamental "benchmark" in the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the OPGGS Act) regime is the facility/activity operator's responsibility to demonstrate via the permissioning documents that they have identified control measures that are necessary to reduce the level of risk to a level that is as low as reasonably practicable (ALARP).

With respect to "standards", a validation statement by an independent, competent validator is required to the effect that:

- for all safety-critical elements covered by the agreed scope of validation the design, construction and installation codes and standards applied in relation to a facility are appropriate; and

- that if these codes and standards are used then the design, construction, and installation of the facility will incorporate measures that will protect the health and safety of persons at the facility and are consistent with the formal safety assessment for the facility, where appropriate.

The overarching principle of the objective, performance-based OPGGS Act regime is that the facility/activity operators creating the risk are responsible for managing the risk. This contrasts with a prescriptive regime where the legislation sets a standard that all participants have to meet irrespective of the extent to which the standards are applicable to their particular circumstances or that by complying with such standards they are managing risk to a level that is ALARP. Furthermore, current standards may not adequately accommodate situations where new or novel technology or new combinations of existing technology are being proposed to be utilised. In such circumstances, the OPGGS Act regime's onus the facility/activity operators to demonstrate, in their permissioning documents, how they are managing risks to a level that is ALARP avoids the gap that would otherwise be present in a prescriptive regime.

(See NOPSEMA's published Validation Policy N-04200-PL0286 and associated Guideline N-04200-GL0525 and ALARP Guidance Note N-04300-GN0166 for further information).

Question 3

What environment and safety risks does NOPSEMA see relating to FLNG,

Hazardous events with the potential to have significant impacts on people and/or the environment are dependent on both the design and location of a facility and the activities being undertaken. In general terms the following types of hazardous events are likely to have the potential for significant impacts and could be associated with an FLNG facility, noting that all but the last could also be associated with other types of floating production, storage and offloading facilities:

- loss of hydrocarbon containment
- collision with facility
- helicopter crash
- structural failure
- loss of position
- dropped objects
- loss of cryogenic fluid containment

And what risk management techniques does NOPSEMA believe should apply for FLNG facilities?

The selection of risk management techniques is dependent on a range of factors and is a matter for the operator of the facility / activity. NOPSEMA provides guidance intended to assist operators to select risk management techniques appropriate to their circumstances.

(See NOPSEMA's published Risk Assessment Guidance Note N-04300-0165, ALARP Guidance Note N-04300-GN0166, Control Measures, and Performance Standards Guidance Note N-04300-GN0271 and Environment Plan Contents Guidance Note N-04700-GN1074 for further information).

Question 4

How does NOPSEMA see its responsibility for marine operations, such as LNG, condensate and LPG tanker offloading, supply/tender vessel loading and unloading, construction vessels, drilling rigs, and standby vessels? How will these responsibilities be coordinated with AMSA?

NOPSEMA regulates occupational health and safety at facilities, where facilities are defined in clause 4 of Schedule 3 to the OPGGS Act. In broad terms a facility is a vessel or structure located in Commonwealth waters undertaking, or preparing to undertake one or more petroleum related activities. Offtake tankers,

tugs or anchor handlers and vessels used for supplying a facility or otherwise travelling between a facility and the shore are excluded from the definition of a facility. Section 640 of the OPGGS Act stipulates that Commonwealth maritime legislation (including the *Navigation Act 1901*, administered by AMSA) does not apply in relation to facilities. Hence NOPSEMA is the sole regulator of occupational health and safety at facilities as defined by the OPGGS Act thus avoiding any duplication or unnecessary regulatory burden.

AMSA coordinates the National Plan for Environmental Emergencies, which is governed by the National Plan Strategic Coordinating Committee that includes Commonwealth and State transport agencies as well as the Commonwealth Department of Industry and NOPSEMA.

(See NOPSEMA's published Facility definition Guideline N-01000-GL0253 for further information).

Is it correct to assume that as the FLNG vessel will be designed to not release from its mooring, the vessel in itself will not be regulated by AMSA?

As noted above, while a vessel meets the definition of a facility, occupational health and safety at the facility is regulated by NOPSEMA.

Does NOPSEMA see any role for WA port authorities?

The role of WA port authorities is a matter for WA port authorities.

Question 5

What does NOPSEMA anticipate will be the requirements for de-manning in cyclone conditions?

As with all hazards with major accident potential, the requirement in the Safety Regulations is for an operator to describe in its safety case how it has assessed the risk and identified control measures to reduce risk to a level that is ALARP. An operator is also required to describe in its safety case for the facility; an Evacuation, Escape and Rescue Analysis.

(See NOPSEMA's published Risk Assessment Guidance Note N-04300-0165, ALARP Guidance Note N-04300-GN0166 and Control Measures and Performance Standards Guidance Note N-04300-GN0271 for further information).

Question 6

What concerns does NOPSEMA have in relation to the capacity of operators and government to respond to emergency situations such as explosions on FLNG facilities?

Operators' capacities to respond to emergency situations is a matter for NOPSEMA to assess on a case-by-case basis when assessing an operator's submitted permissioning documents and subsequently through compliance monitoring inspections, i.e. by verifying the effective implementation of operators' control measures at facilities and activities.

Government capacity to respond to an emergency situation is a matter for government.

Question 7

Shut down and maintenance of an FLNG facility may be required every 18 months and potentially involve 1,500 personnel. What additional safety conditions will NOPSEMA require for periods of additional personnel being required on the FLNG facility for periodic shut down and maintenance?

All hazards, risks and control measures associated with activities at a facility, including maintenance activities, must be appropriately addressed in the safety case of the respective facilities.

Question 8

What processes will NOPSEMA have for the operational phase of an FLNG facility? For example, will periodic inspections be made?

Refer to the responses to Question 1D

Will safety cases and environmental plans need to be updated and reviewed periodically?

The Safety Regulations and Environment Regulations provide for the revision and resubmission to NOPSEMA of safety cases and environment plans respectively:

- Because of a change, or proposed change of circumstances or operations;
- On the request of NOPSEMA; and
- At the end of each five years.

(See NOPSEMA's published Safety Case Lifecycle Management Guidance Note N-04300-GN0087 for further information)

Question 9

Has the Design Safety Case and Development Environment Plan for Shell's Prelude facility been approved by NOPSEMA?

No. There is neither provision in the Safety Regulations for the submission and approval of a "Design Safety Case" nor provision in the Environment Regulations for the submission and approval of a "Development Environment Plan".

Question 10

The Committee understands that NOPSEMA was established in 2012 in response to the strong recommendations in the report of the Montara Commission of Inquiry (2011) and the Productivity Commission Report on the regulatory burden on the upstream oil and gas sector (2009). Evidence has been presented to the Committee in relation to what is described as overregulation and regulatory duplication with government and between state and federal jurisdictions. This is presented as a substantial cost to oil and gas producers. Could NOPSEMA please comment on this issue and advise what work is currently underway to reduce the regulatory burden on the oil and gas industry?

NOPSEMA, established in 2012, continued the existence of NOPSA, itself established in 2005. A report of the Second Triennial review of the Operational Effectiveness of NOPSA conducted in 2011 and tabled in Parliament by the responsible Commonwealth Minister found that NOPSA had firmly established itself "as a respected and competent safety regulator among stakeholders and peers in both the domestic and international offshore petroleum and gas industry".

With respect to environment assessments conducted by NOPSEMA under the OPGGS Act and separate assessments conducted under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (the EPBC Act); the Minister for Industry, Minister for the Environment and Chief Executive Officer of NOPSEMA have agreed to undertake a strategic assessment of NOPSEMA's current environmental management processes. The outcome of the strategic assessment, scheduled for completion by Q1 2014, is aimed at delivering faster environmental approvals and reducing duplication in environmental assessments and regulation whilst maintaining the integrity of the environmental approvals process. *(See the Media release available on the Department of Industry [website](#) for further information)*

NOPSEMA understands that some industry proponents consider that conferral of OHS, well integrity and environmental functions from the states and Northern Territory to NOPSEMA would reduce duplication between state and federal jurisdictions and would reduce regulatory burden. Victoria has conferred powers to NOPSEMA with respect to OHS and integrity in the Victorian designated coastal waters.

NOPSEMA continues to effectively discharge its promotion and advice functions by engaging with industry directly and providing a range of publications and guidance aimed at improving responsible parties' understanding of their obligations under the legislation NOPSEMA administers. NOPSEMA suggests that clarity with respect to legislative requirements is a key aspect in differentiating between actual versus perceived regulatory burden in many cases.

NOPSEMA also continues to work with the Commonwealth Department of Industry on a range of legislative change proposals to reduce regulatory burden by providing greater clarity within the OPGGS legislation and consistency across the regulations that NOPSEMA administers.