

An Offshore Regulator's Perspective: Maintaining Focus on Managing Spill Risk**Cameron Grebe, Matthew Smith and David Ball**

National Offshore Petroleum Safety and Environment Management Authority, Environment Division, 58 Mounts Bay Road Perth WA 6000, Australia

ABSTRACT 300299:

Lest we forget – three years after Macondo the focus on preparing for major oil spills and ensuring offshore petroleum companies have arrangements in place that match the specific risks of the activity is as critical as ever. The Australian regulator is resolved to continually challenge risk assessments and require companies to go beyond design events in order to meet their commitments for a world-class preparedness and response capability.

Established to independently administer an objective-based regulatory regime for the offshore petroleum industry in Australian Commonwealth waters, the National Offshore Petroleum Safety and Management Authority seeks to hold industry to account for its level of preparedness for a major incident. Challenged by remote and vulnerable areas, the Australian oil and gas industry has responded admirably, if not collectively.

The competitive nature of the industry, the necessary focus on prevention, emerging technologies and more difficult targets have influenced the level of enthusiasm for continually improving oil spill preparedness arrangements. As the regulator of offshore environmental management our focus is to ensure that as time progresses, and prevention measures prove themselves reliable, that these factors do not impede further progress in preparing for mitigating and remediating major oil spills.

There are paradoxical challenges for industry preparedness. No single company can or should hold the full range of resources for a preventable incident. Yet society expects exactly this standard from those developing Australia's riches. The radical centre of this paradox is where insightful and lasting solutions can and must be found - weak compromises such as showing preparedness for your last event will often fail when put to the test. Companies and Governments alike must maintain situational awareness of their spill risks and evaluate the circumstances they find themselves in and implement measures to manage this risk.

A regulator's role is only effective if they are challenging companies and asking questions: Have you done enough to understand and manage the risks? Are you implementing what is required? The regulator in Australia has implemented a way of regulating that, in part, aims to keep industry's focus on their next event and not their last. Its mechanism for doing so is to establish an improvement culture of open and transparent risk assessments that are subject to challenge against legislated risk acceptance criteria. This paper outlines the current challenges of an independent regulator and identifies the next steps in challenging industry to do more.

INTRODUCTION:

This paper outlines the current challenges faced by an independent regulator and industry in working within an objective-based environmental management regime. It concludes by identifying opportunities for industry and the regulator to continue to improve existing oil spill preparedness arrangements in Australia.

Australian arrangements:

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) was established on 1 January 2012 as the single independent regulator for offshore petroleum health and safety, well (structural) integrity and environmental management in Australia's Commonwealth waters (Figure 1). This comprehensive regulatory regime was formed in the wake of the findings and recommendations of the 2010 Montara Commission of Inquiry (Borthwick 2010) and an earlier Productivity Commission Report (PC 2009). The Productivity Commission Report supported strengthening and consolidating the objective-based regulation of the offshore oil and gas industry within Australia.

Australia's Commonwealth waters are the world's third largest ocean territory, spanning three oceans and covering around 12 million square kilometres (Figure 1). At present the offshore oil and gas industry operations and exploration activities are primarily focused on the northern and north-western regions of Western Australia/Northern Territory and offshore from Victoria in the southeast.

The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) provides the legislative basis for the regulatory regime in Australia supported by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009¹. Further guidance documents are published by NOPSEMA at nopsema.gov.au (2012, 2013). The objective of the Environment Regulations is to ensure that petroleum activities are carried out in a manner that is consistent with the principles of ecologically sustainable development; and in accordance with appropriate environmental performance objectives, standards and measurement criteria.

¹ These Regulations were amended when the Offshore Petroleum and Greenhouse Gas Storage Legislation Amendment (Environment Measures) Regulation 2014 commenced on 28 February 2014.

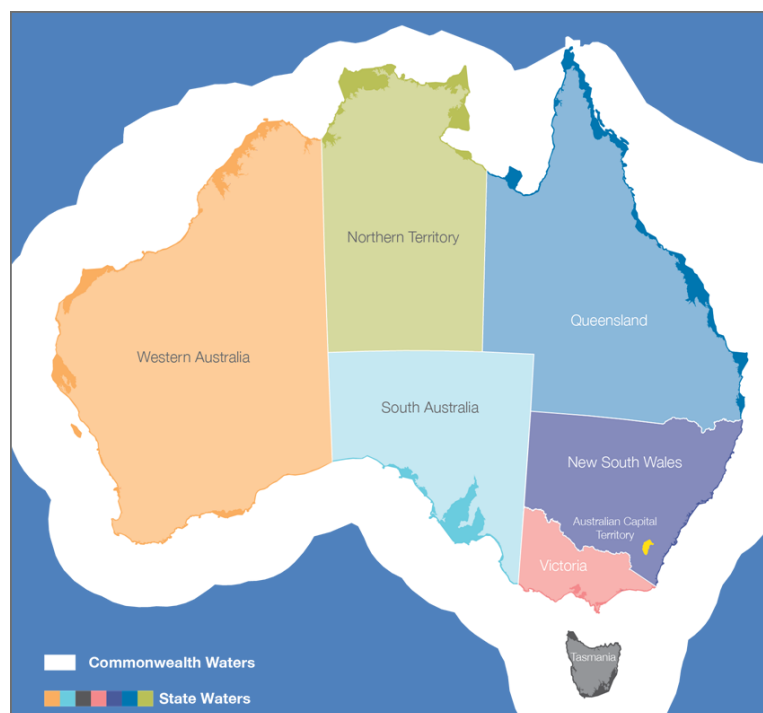


Figure 1: Australian Commonwealth waters under NOPSEMA jurisdiction.

The Australian regulatory regime places the onus on the company to manage marine pollution risks and requires that all ‘petroleum activities’ have an environment plan (EP), including an oil pollution emergency plan (OPEP), accepted by NOPSEMA before that activity is able to commence. An EP must identify the environmental risks of a petroleum activity, including those risks associated with any emergency or spill response, and demonstrate that the impacts and risks from the activity have been reduced to ‘as low as reasonably practicable’ (ALARP), and that any residual impacts and risks are of an acceptable level. At the end of 2013, there were 37 companies conducting (or due to conduct) 133 petroleum activities under an accepted EP.

Each company has a duty to establish, maintain and implement an oil pollution response capability, which may be in partnership with other parties. This response capability must be commensurate with the risks presented by the particular activity. Where the response activities rely on, or may affect relevant stakeholders (i.e. where the company has nominated another entity as the Control Agency, or where a spill scenario may impact on coastal (state or Northern Territory waters), the company is required to demonstrate in the EP appropriate consultation and that relevant agreements are in place.

Comparable legislation and regulations exist for offshore petroleum activities in state and Northern Territory waters. Each state and the Northern Territory establish their own regulator and have specific oil spill response arrangements for offshore petroleum activities within their jurisdiction. Further detail on these arrangements can be found in the state and Northern Territory marine pollution contingency plans.

Acceptance criteria:

An EP must demonstrate that the environmental impacts and risks of a petroleum activity will be managed to a level that is ALARP. The key element of ALARP is the concept

of reasonable practicability; weighing up the size of the risk against the cost of elimination, prevention, reduction and mitigation. A risk control measure can be considered as being reasonably practicable if the costs to implement it are not grossly disproportionate to the reduction in risk achieved.

Oil spill response strategies are considered risk controls that contribute to minimising consequences to the environment. An OPEP submitted to NOPSEMA within an EP must identify the performance standards associated with the oil spill risk controls that manage and measure the environmental impacts and risks associated with the activity. Performance standards document the expected effectiveness of selected controls and can provide information about the functionality, availability, reliability, dependence, survivability and compatibility of those controls. The impacts and risks associated with the response strategies must be described and evaluated in the EP to ensure they are ALARP and acceptable. This is one of the mechanisms that enables NOPSEMA to accept industry requests for pre-approval of response strategies, including dispersants, and demonstrates the importance of this essential step.

METHODS:

This paper presents an overview of qualitative observations and interpretation of quantitative data gathered by NOPSEMA over its first two years of operations. Quantitative data is maintained on EP submissions, including deficiencies identified in different iterations where a company has been provided an opportunity to modify and resubmit a plan before it is accepted and the grounds for refusal of all rejected plans. This data is regularly assessed by NOPSEMA to identify whether any consistent themes or patterns emerge where industry may be facing challenges in achieving compliance with the Regulations. This process also assists in identifying opportunities for strategic communication with industry and focus areas for inspections.

Qualitative observations are derived from direct communications between NOPSEMA personnel and industry representatives during strategic and operational liaison meetings. In its first two years, NOPSEMA conducted 379 company liaison meetings to provide guidance on specific EP submissions and/or broad strategic advice on environment regulatory issues. Further anecdotal evidence to support and guide the interpretation of quantitative data is derived from these industry interactions and from the EP assessment process.

Participation by NOPSEMA in national and international regulatory forums and conferences (e.g. International Regulators Forum, International Regulator's Offshore Safety Conference, International Offshore Petroleum Environment Regulators) combined with liaison with industry bodies (e.g. Australian Petroleum Production & Exploration Association, Australian Marine Oil Spill Centre) provide an external context and assists in identifying the status of industry spill response initiatives and emerging priorities.

RESULTS/DISCUSSION:

Between January 2012 and December 2013, NOPSEMA received 224 EPs for petroleum activities with drilling being the predominant activity type (Figure 2). As of 31 December 2013, 151 EPs had been accepted, 11 EPs not accepted and the remaining 62 under review. Companies are provided a reasonable opportunity to modify and resubmit (OMR) an

EP where NOPSEMA is not satisfied it meets the acceptance criteria, with the current policy allowing typically two opportunities to modify.

Of those EPs accepted, only 10% were accepted on their first submission, while the remaining 90% required at least one OMR before they were accepted. Comparing data from 2012 and 2013 (Figure 3), however, shows that a higher proportion of EPs were accepted without requiring an OMR in 2013, and a lower proportion required more than one OMR prior to being accepted. The reduction in total assessment time reflects an improvement in the overall submission and assessment process, both in terms of EP quality and the efficiency of information exchange through NOPSEMA/company interaction and liaison.

While there has been an overall improvement in the quality of EPs received by NOPSEMA since 2012 there remain some broad areas for improvement summarised below which continue to pose challenges for both the regulator and industry.

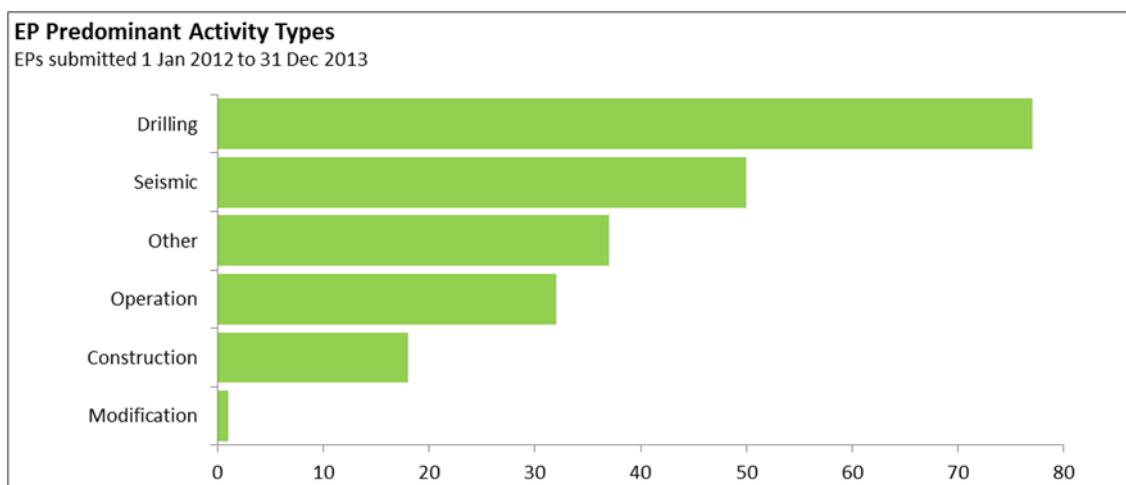


Figure 2: Predominant EP activity type submitted to NOPSEMA 2012-13.

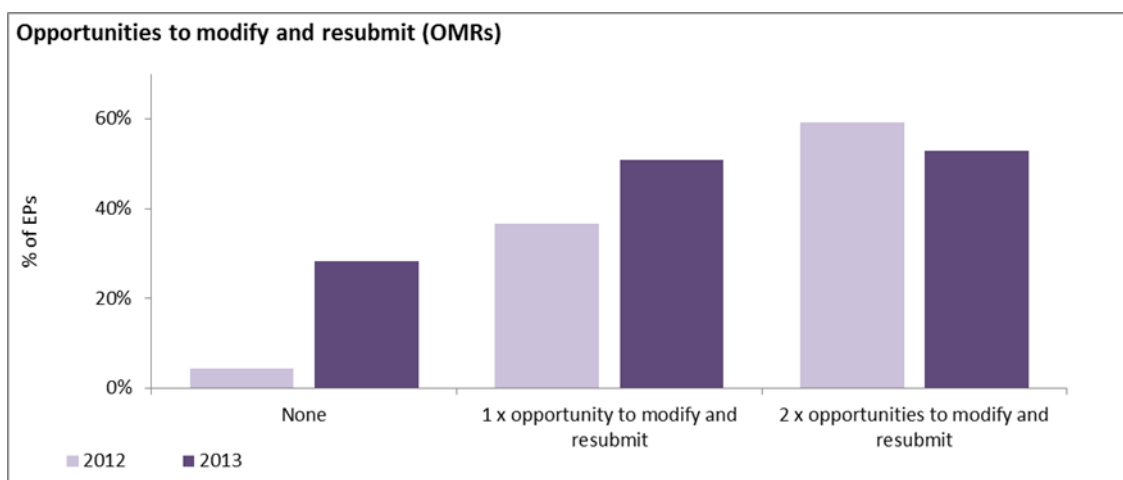


Figure 3: Opportunities to modify and resubmit EPs in 2012 and 2013.

Regulatory challenges:**Nature of the regulations:**

The Environment Regulations are flexible and objective-based in nature. This flexibility, however, has also led to some unfocused submissions that lack clarity, are contradictory and do not meet the regulatory requirements. Despite guidance, extensive engagement, and enhanced communication programmes, there remains some misalignment in the intent, interpretation and application of the Regulations. While some areas of ambiguity in the Regulations have presented communication challenges, some submissions have shown a lack of general understanding of the Regulations and a lack of familiarity with NOPSEMA's approach and guidance material.

Communication – Regulator to industry:

Effective communication is a critical factor for the success of objective-based regulatory regimes. As an independent regulator NOPSEMA strives to provide regulatory guidance without offering prescriptive solutions that inadvertently lead to a transfer of risk from a company to the regulator. With differing levels of understanding of the regulatory regime across industry, NOPSEMA must actively ensure its guidance material and the messages communicated at company liaison meetings, particularly for key concepts about acceptance criteria, are consistent across companies and with its internal practices. At the same time communication is a two-way street and companies and their advisors would benefit from an improved understanding of their obligations under an objective-based regime, and how this should influence the manner in which they communicate during liaison meetings.

While it is possible that the perception gap will get smaller over time, it is the obligation of the company under an objective-based regime to demonstrate that an activity is acceptable, and to consider best practice in their development of controls. Miscommunication and misunderstandings are likely to continue where companies remain focussed on previously accepted plans or advice without considering the specific context of the situation in which the decision or advice was provided.

NOPSEMA's challenge remains to provide a clear and consistent interpretation of the regulations and to communicate this to industry at every opportunity. As an independent regulator, however, NOPSEMA also needs to ensure that its guidance avoids 'regulatory creep' by inadvertently adding or prescribing regulatory requirements. Where a clarification or strengthening of the Regulations is required it is NOPSEMA's obligation to pursue improvements through a legislative change agenda.

Industry challenges:**Working within an objective-based regime:**

The nature of an objective-based regulatory regime means that in many respects the challenges for industry in working within the Regulations mirror those of the regulator in interpreting and enforcing the Regulations. Under objective-based regulation, individual companies have the flexibility to adopt environmental management practices best suited to individual company circumstances, activities and locations, so long as they set valid environmental performance objectives and standards to be met during the activity. Some companies, however, have found this process difficult, resulting in inappropriate environmental performance objectives, performance standards and measurement criteria.

The change to an objective-based regime requires a change in the skills, judgement and mindset of the authors and owners of EPs. It requires companies to devise ways to ensure and demonstrate compliance in the absence of a detailed set of rules. It also requires more engagement from those preparing an EP than simply basing a current submission on the blueprint or template of a past accepted plan. It is important to fully consider the context of an accepted plan before attempting to apply its environmental performance objectives, performance standards and measurement criteria to another plan. This requires a significant engagement of senior management and broader multi-disciplinary project teams.

For the regime to work effectively, and EPs to be accepted by the regulator, companies need to develop a strategic approach to their preparation of EPs, and their environmental management of petroleum activities in general. Since NOPSEMA was established, companies have recognised a need for different skill sets and approaches to develop EPs. They have acknowledged a need for internal ownership, and that EP authors need to be better aligned with the planning, operating and management teams. One approach is to learn from the objective based regime for the 'Safety Case' and consider EPs as an 'Environment case'. These should preferably be developed collaboratively by management teams and subject matter experts. While there is a role for external consultants and advisors to document EPs and to work up internal systems and controls, these must be done in close association with the submitting organisation, and can no longer be done in isolation as may have been possible in a prescriptive regulatory regime.

Environment Plan development and content:

Misunderstandings about the requirements for developing an EP (incorporating an OPEP) consistent with the Regulations have resulted in submissions which are deficient due to:

- an insufficient level of detail and fulfilling regulatory requirements correctly
- not articulating the case well enough to withstand impartial scrutiny
- a lack of transparency in decision-making with regard to selection of risk controls
- inconsistent commitments to quality risk/impact management
- ambiguous and unenforceable commitments and performance standards.

Central to these deficiencies has been a view by some in industry that EPs and their associated OPEP are for 'approval' rather than managing impacts and risks from their activities. This may have come from the previous regulatory regime which provided companies with an opportunity to defer risks to the regulator. This approach has been removed under the objective-based regulatory regime, and the obligation and accountability for managing impacts and risks for their specific petroleum activity has been firmly put back on the company.

This misunderstanding may also stem from a cultural predisposition to satisfy the regulator, as opposed to identifying and managing impacts and risks to the environment, making the case for the required level of performance, and adherence to this level of performance. A compliance mentality risks stifling continuous improvement as there is a fear of regulatory repercussions arising from the heightened transparency necessary to mount a case for acceptance.

Industry collaboration:

Industry has shown that it is capable of collaborating in spill response planning to share the cost of technological developments (e.g. Oil Spill Response Joint Industry Project), major equipment purchases (e.g. subsea first response toolkit), and regional contingency planning initiatives (e.g. Oiled Wildlife Response Plan for Western Australia's North West Shelf Region). 'Knowing the expectations of NOPSEMA', however, appears to have developed into a perceived competitive advantage between companies. As an independent regulator in an objective-based regime, NOPSEMA cannot offer case-specific solutions. Companies should consider seeking feedback on their particular approaches and solutions from other companies or through industry peak bodies. There are clear benefits for industry to work collaboratively to develop common approaches or produce case studies that may be useful when preparing specific EPs.

Continuous improvement:

The concept of ALARP is mandated in the Environment Regulations. There are relatively few examples of this exact acceptance concept applying to environmental management worldwide. Given its mandate, NOPSEMA has an obligation to clearly articulate its approach to the application of ALARP to environmental management. Critical to the demonstration of ALARP is the need to show NOPSEMA that all feasible controls have been identified and evaluated, and that any other actions to further reduce a risk are unreasonable and/or impracticable given the risk reduction expected. A key to this demonstration is justifying why any rejected controls should not be implemented.

For oil spill preparedness it is useful to equate an appropriate level of preparedness with the concept of ALARP. Companies are required to understand the possible consequences of their activities, determine the resource needs should a consequence be realised, and make a case for a level of oil spill preparedness that shows all things reasonably practicable will be done to prepare for and respond to such an event. This includes putting processes in place to adapt, execute and escalate a response.

Often companies argue that prevention is the key. NOPSEMA wholeheartedly supports this view, however, history unfortunately tells us that major oil spills are a question of when, not if, they will happen. It is true to say, therefore, that the level of prevention can influence the level of preparedness but it is not sufficient to say that prevention removes the need for preparedness.

In response to NOPSEMA assessment of EPs, some companies have made claims that much of the work NOPSEMA is asking for has already been completed or there is anxiety at what more must be done to demonstrate ALARP and satisfy the regulator. Whilst this might be the case, if it is true that current environmental management practice is world-class, then the outcomes of regulatory scrutiny should be easily addressed through provision of a persuasive case to the regulator.

As the above discussion shows, NOPSEMA places a high degree of importance on companies showing they are ready to manage an oil spill should one occur. The work of assessing case-specific and detailed EPs to the highest standards and within legislated timeframes requires a professional, ethical and independent regulator. For this reason, NOPSEMA recruits competent and experienced personnel, offering above average market salaries to attract the best people. Without this critical mass of competent personnel, NOPSEMA would not be able to challenge the assumptions and justifications of industry

when necessary or successfully ensure that the ALARP benchmark is achieved in managing oil spill risks.

CONCLUSIONS:

In the last two-years the offshore petroleum industry in Australian Commonwealth waters has seen transformational changes in response to regulatory challenges to appropriateness of levels of oil spill preparedness. As the industry grows and risk profiles change the long-term challenges discussed in this paper will persist due to the nature of the regulatory regime. The experience gained to date has identified possible opportunities for both industry and the regulator to ensure preparedness for the next major event – not the last. This paper concludes by outlining three opportunities identified to ensure industry's preparedness capacity and capability remains world-class.

1. Leverage the flexibility of an objective-based regime

The objective-based regime gives a high degree of flexibility to companies which can be leveraged to fit the purposes and circumstances of each case. As discussed this approach to regulation relies heavily on the communication effectiveness of both the regulator and the company to discuss technical issues, collaborate to develop a mutual understanding of the regulations, and respectfully engage on items of conjecture.

2. Emphasise the importance of a continuous improvement culture

Transforming a compliance mentality to one of continuous improvement will take time and is easily undermined by pressure to meet operational deadlines and works schedules. Three pillars of establishing an improvement culture are that:

- The regulator must act pragmatically and proportionately to particular circumstances allowing the opportunity for companies to identify, address and implement measures to improve performance.
- Industry must be fully accountable for their actions by allowing scrutiny of decision reasoning, implementing corrective actions in a timely manner, and reporting openly.
- Both the regulator and industry must value transparency and information sharing to enable constructive debate and communication on technical, scientific, regulatory and operational issues.

3. Maintaining and enhancing professional skills and experience

The quality of environmental outcomes will continue to improve as both industry and the regulator enhance each other's skills, knowledge and experience. Industry should sustain efforts to defend their decisions and develop resourceful and innovative methods of managing environmental impacts and risks. The regulator will preserve and evolve its capabilities to conduct technical, merit-based, impartial assessments of company proposals. It is imperative that mutual understanding of each other's roles, priorities and limitations continues to evolve, coupled with effective communication to underpin progress toward better environmental outcomes.

At a practical level, to capitalise on these opportunities, NOPSEMA will scrutinise company risk assessments to ensure that all things reasonably practicable are being done to prepare for and respond to an oil pollution incident. Together with continually improving communication effectiveness, as well as monitoring and enforcing compliance with the law,

NOPSEMA will continue to challenge Australia's offshore petroleum industry to be prepared for its next major incident.

REFERENCES:

Borthwick, D. 2010, Report of the Montara Commission of Inquiry Commissioner, Montara Commission of Inquiry, June 2010, Canberra, Australia.
<http://www.innovation.gov.au/AboutUs/CorporatePublications/MontaraInquiryResponse/Documents/Montara-Report.pdf> (last accessed 19.02.14)

NOPSEMA, 2012, Oil spill contingency planning. Environmental guidance note, N-04700-GN0940 Rev 2, July 2012, National Offshore Petroleum Safety and Environmental Management Authority, Perth, Australia. <http://www.nopsema.gov.au/assets/Guidance-notes/N-040700-GN0940-Rev2-Oil-Spill-Contingency-Planning.pdf> (last accessed 30.12.13).

NOPSEMA, 2013, Environment plan content requirements. Guidance Note N4700-GN1074 Revision 1 January 2013, National Offshore Petroleum Safety and Environmental Management Authority, Perth, Australia. <http://www.nopsema.gov.au/assets/Guidance-notes/N-04700-GN1074-Environment-Plan-Content-Requirements-Guidance-Note-rev-1.pdf> (last accessed 30.12.13).

Productivity Commission, 2009, Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector, Research Report, Commonwealth of Australia, Melbourne, Australia. http://www.pc.gov.au/data/assets/pdf_file/0011/87923/upstream-petroleum.pdf (last accessed 25.02.14).

BIBLIOGRAPHY:

Department of Industry, 2013, Amendments to the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 Exposure Draft – Explanatory Document. Australian Government, Canberra, Australia.
<http://www.industry.gov.au/resource/UpstreamPetroleum/OffshorePetroleumEnvironment/Documents/ExposureDraftExplanatoryDocument.pdf> (last accessed 25.02.14).

Department of Industry, 2013, Streamlining offshore petroleum environmental approvals – Draft strategic assessment report, Australian Government, Canberra, Australia.
<http://www.industry.gov.au/resource/UpstreamPetroleum/OffshorePetroleumEnvironment/Documents/ConsultationDraftStrategicAssessmentReport.pdf> (last accessed 25.02.14).

NOPSEMA, 2012a, ALARP. Guidance Note, N-04300-GN0166 Revision 4 December 2012, National Offshore Petroleum Safety and Environmental Management Authority, Perth, Australia. <http://www.nopsema.gov.au/assets/Guidance-notes/N-04300-GN0166-ALARP.pdf> (last accessed 30.12.13).

NOPSEMA, 2012b, Control Measures and Performance Standards. N04300-GN0271 Revision No 4 December 2012, National Offshore Petroleum Safety and Environmental Management Authority, Perth, Australia. <http://www.nopsema.gov.au/assets/Guidance->

[notes/N-04300-GN0271-Control-Measures-and-Performance-Standards.pdf](#) (last accessed 30.12.13).