

# Offshore Petroleum Facility Incidents Post Varanus Island, Montara, and Macondo: Have We Really Addressed the Root Cause?

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# OFFSHORE PETROLEUM FACILITY INCIDENTS POST VARANUS ISLAND, MONTARA, AND MACONDO: HAVE WE REALLY ADDRESSED THE ROOT CAUSE?

TINA HUNTER\*

## ABSTRACT

This Article analyzes the role of offshore petroleum legislation in contributing to offshore facility integrity incidents in Australia's offshore petroleum jurisdiction. It examines the regulatory framework that existed at the time of the Varanus Island, Montara, and Macondo facility incidents, determining that the regulatory regime contributed to each of these incidents. Assessing the response of the Commonwealth government to the regulatory framework existing at the time of the events, particularly the integration of well regulation as part of the National Offshore Petroleum Safety Authority's ("NOPSA") functions and the establishment of a national offshore regulator, this Article determines that while the integration of well management into NOPSA's functions has been a valuable and a significant improvement. There is still a likelihood that differing standards applied to the regulation of petroleum facilities ("Safety Case Regime") and wells ("Good Oilfield Practice"), multiple regulators, and regulatory disjuncture may continue to contribute to facility incidents. This Article concludes that the establishment of the National Offshore Petroleum Titles Authority, the retainment of the Joint Authority, and the enhancement of NOPSA's functions to include environmental management have created a regulatory framework that is complex, increasingly convoluted, and has not addressed the root cause of facility incidents in Australia's offshore petroleum jurisdictions.

## INTRODUCTION

The regulation of offshore petroleum resource development in Australia is complicated by the legal framework governing Australia's

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offshore zone, the Australian Federation, and the struggle for state control over some marine waters during the 1970s. Established in 1967, the offshore petroleum legislative framework was enacted in response to the legal relationship between the Australian States/Northern Territory ("States/NT") and the Australian Commonwealth. The implementation of the *Sea and Submerged Lands Act 1973*, a subsequent judicial challenge to the validity of the legislation, and the resultant governmental negotiations (the Offshore Constitutional Framework) have resulted in a multifaceted offshore petroleum regulatory framework. This resultant regulatory framework shares the regulation of offshore petroleum activities between the States/NT, which regulates from Baseline seaward to three nautical miles, and the Commonwealth, which regulates seaward from three nautical miles to the extent of Australia's maritime jurisdiction.

The purpose of this Article is to analyze whether the regulatory regime in place at the time of the Varanus Island explosion and the Montara well blowouts contributed to the incidents. This analysis determines if the offshore petroleum regulatory framework that existed at the time of these events created or increased the possibility of a major safety event by contributing to a loss of well control, and evaluates whether the regulatory responses to these incidents have lessened the risk of loss of well control occurring again. After analyzing the regulatory framework at the time of these offshore facility events, this Article outlines and examines the regulatory response by the Australian government. Finally, this Article determines whether the government regulatory reforms reduce the likelihood of facility incidents resulting from loss of well control.

#### I. VARANUS ISLAND EXPLOSION AND THE MONTARA BLOWOUT IN THE AUSTRALIAN OFFSHORE JURISDICTION

In 2008 and 2009, two potentially lethal facility incidents, known as catastrophic facility integrity failures ("CFIFs"), occurred in Australia's offshore petroleum jurisdictions. Coupled with the subsequent Macondo Blowout, these incidents led the petroleum industry and governments to reassess the likelihood of facility incidents and responses to such events.

The Varanus Island gas pipeline explosion occurred at the offshore gas facility on Varanus Island off the northwestern Western Australian coastline near Karratha.<sup>1</sup> It resulted from the rupture of a gas

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<sup>1</sup> Z. LAMBERT & B. RICHARDSON, NAT'L OFFSHORE PETROLEUM SAFETY AUTH., FINAL REPORT OF THE FINDINGS OF THE INVESTIGATION INTO THE PIPE RUPTURE AND FIRE INCIDENT ON

pipeline, cutting the supply of gas to Western Australia by thirty percent.<sup>2</sup> Investigations into the ruptured pipeline indicate that the existing regulatory framework contributed to the CFIF.<sup>3</sup> In addition, the investigation concluded that the pipe rupture and explosion could have been avoided if facility integrity had been managed by a single agency rather than jointly by NOPSA and the Western Australian Department of Mines and Petroleum (“WADMP”), since a single regulator would have been responsible for the facility and the pipelines carrying the gas from the production platform to markets onshore.<sup>4</sup>

The second incident, arguably far more serious, was the Montara Well Blowout and subsequent oil spill on August 21, 2009. The Montara incident was the first major marine oil spill from an Australian offshore petroleum platform.<sup>5</sup> It occurred in a remote area northwest of the Western Australian coast, approximately 690km from Darwin and 250km from Indonesia. The spill continued until November 3, 2009, a total of seventy-four days.<sup>6</sup> The spill was stopped when a relief well capped the leaking well.<sup>7</sup> Overall, approximately 4750 metric tons of oil leaked from the well.<sup>8</sup>

The operator of the Montara Platform PTTEP Australasia (“PTTEPAA”), outlined the probable cause of the Montara Oil Spill in its submission to the Montara Commission of Inquiry (“MCI”). According to the submission, an initial uncontrolled hydrocarbon release (“UHR”)<sup>9</sup> (containing approximately forty to sixty barrels) occurred on the Montara Well

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3 JUNE 2008 AT THE FACILITIES OPERATED BY APACHE ENERGY LIMITED ON VARANUS ISLAND 8 (2010) (Austl.).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.* at 8–10.

<sup>4</sup> *See id.*; PRODUCTIVITY COMM’N, REVIEW OF REGULATORY BURDEN ON THE UPSTREAM (OIL AND GAS) SECTOR: RESEARCH REPORT 237 (2009) (Austl.).

<sup>5</sup> All other major oil spills in Australia have been the result of ship-sourced pollution. For details of all major oil spills in Australia’s waters in the last thirty years, see generally *Major Historical Incidents*, AUSTL. MAR. SAFETY AUTH., <http://www.amsa.gov.au/environment/major-historical-incidents/> (last visited Apr. 9, 2014) [hereinafter *Major Historical Incidents*].

<sup>6</sup> *Id.*

<sup>7</sup> *Major Oil Spills in Australia: Montara Well Head Platform*, AUSTL. MAR. SAFETY AUTH., [https://www.amsa.gov.au/environment/major-historical-incidents/Montara\\_Wellhead/index.asp](https://www.amsa.gov.au/environment/major-historical-incidents/Montara_Wellhead/index.asp) (last visited Apr. 9, 2014).

<sup>8</sup> *Major Historical Incidents*, *supra* note 5.

<sup>9</sup> The initial leak was called an Uncontrolled Hydrocarbon Release, since it contained both oil and gas. *See* PTTEPAA AUSTRALASIA, TERM OF REFERENCE NO. 1, SUBMISSION TO COMMISSION OF INQUIRY, MONTARA WELL HEAD PLATFORM UNCONTROLLED RELEASE ¶ 89 (2010). In this study, “UHR” and “oil spill” have the same meaning.

Head Platform on the H1 Well at 5:30 AM on August 21, 2009.<sup>10</sup> This release subsided, although bubbles were seen and heard from the top of the well conductor.<sup>11</sup> This was followed by another UHR at 7:23 AM, of higher pressure and volume than the initial UHR, containing a mix of unignited oil and gas.<sup>12</sup> Soon after, all personnel abandoned the rig, since safety was compromised due to the presence of unignited hydrocarbons.<sup>13</sup> Immediately after the second UHR, PTTEPAA reported the UHR to the Australian Maritime Safety Authority ("AMSA") and control of UHRs was transferred to AMSA in accordance with the provisions of the National Oil Plan ("NATPLAN") and the National Marine Oil Spill Contingency Plan ("NMOSCP").<sup>14</sup>

The submission provided by PTTEPAA to the MCI identified the causes of the UHR as a failure to install a 320mm Pressure Containment Cap ("PCC") on the H1 Well and the failure of the float in the casing shoe.<sup>15</sup> A 244mm PCC had been installed on the H1 Well; however, a change order had requested a 320mm PCC to be installed.<sup>16</sup> The absence of the 320mm PCC was discovered by PTTEPAA when work on the well commenced in August 2009.<sup>17</sup> PTTEPAA was advised in March 2009 by the drilling supervisor on the West Atlas drill rig that the PCC had been installed. However, this was subsequently discovered by PTTEPAA not to be the case when work on the well commenced in August 2009.<sup>18</sup>

The findings of the MCI concurred with the PTTEPAA submission, concluding that the failure of PTTEPAA to use PCCs as a secondary well control barrier in conjunction with the failure of the cement barrier effectively left the well suspended without a satisfactorily tested and verified

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<sup>10</sup> *Id.* ¶ 81.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* ¶ 84.

<sup>13</sup> *Id.*

<sup>14</sup> PTTEPAA AUSTRALASIA, TERM OF REFERENCE NO. 5, SUBMISSION TO COMMISSION OF INQUIRY, MONTARA WELL HEAD PLATFORM UNCONTROLLED RELEASE ¶ 1 (2010); AUSTRAL. MAR. SAFETY AUTH., NATIONAL PLAN: AUSTRALIA'S NATIONAL PLAN TO COMBAT POLLUTION OF THE SEA BY OIL AND OTHER NOXIOUS AND HAZARDOUS SUBSTANCES 5 (2007); AUSTRAL. MAR. SAFETY AUTH., NATIONAL MARINE OIL SPILL CONTINGENCY PLAN s 3.4 (2005).

<sup>15</sup> PTTEPAA AUSTRALASIA, *supra* note 9, ¶ 92. This is corroborated by ATLAS DRILLING PTY LTD, COMMISSION OF INQUIRY, MONTARA WELL HEAD PLATFORM UNCONTROLLED HYDROCARBON RELEASE: OUTLINE OF WRITTEN SUBMISSION BY ATLAS DRILLING PTE LTD. ¶ 13 (2010).

<sup>16</sup> PTTEPAA AUSTRALASIA, *supra* note 9, ¶ 98.

<sup>17</sup> *Id.* ¶ 100.

<sup>18</sup> *Id.*

barrier and other well control barriers.<sup>19</sup> The MCI noted that this practice did not constitute “Good Oilfield Practice” (“GOP”) and breached PTTEPAA’s Well Construction Standards.<sup>20</sup>

The MCI concluded that whilst the absence of tested barriers was the proximate cause of the Montara Blowout, there were more serious systemic factors contributing to the Montara Blowout.<sup>21</sup> These included:

1. The Well Operations Management Plan (“WOMP”) for the well and the well construction standards were poor;
2. PTTEPAA personnel had limited experience of batch drilling;
3. Rig personnel demonstrated a manifestly inadequate understanding of Well Construction Standards;
4. PTTEPAA senior rig personnel were deficient in their decision-making and judgment;
5. Manifest failures within PTTEPAA were in part attributable to the relationship between PTTEPAA and the Northern Territory Department of Resources (“NTDOR”);
6. The NTDOR as a regulator was deficient in failing to enforce GOP by approving the WOMP for the well;
7. The NTDOR regulatory regime was totally inadequate, being little more than a “tick and flick” exercise, and did not reflect contemporary regulatory practice, and;
8. Well integrity issues in general were not well scrutinized by Australian regulators compared to overseas jurisdictions.<sup>22</sup>

The third internationally known incident is the Macondo Well Blowout and subsequent oil spill in the Gulf of Mexico on April 20, 2010 at the BP-operated Macondo Prospect. Following a loss of well integrity, there was an explosion on the Deepwater Horizon drilling rig, causing

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<sup>19</sup> DAVID BORTHWICK, REPORT OF THE MONTARA COMMISSION OF INQUIRY 343–45 (2010), available at <http://www.industry.gov.au/resource/Documents/upstream-petroleum/approvals/Montara-Report.pdf>.

<sup>20</sup> *Id.* at 11.

<sup>21</sup> *Id.* at 9.

<sup>22</sup> *Id.* at 9–11.

the death of eleven rig workers and rupturing the riser, leading to the worst oil spill in history.<sup>23</sup> The Report to the President by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling concluded that the immediate cause of the Macondo Blowout and oil spill was a loss of well integrity attributable to a series of identifiable mistakes made by BP, Halliburton, and Transocean.<sup>24</sup>

Through consideration and focus on the incidents that have occurred in Australia's offshore jurisdiction, this Article explores the notion that the Australian offshore petroleum regulatory framework contributed to the petroleum facility incidents and considers whether, despite substantial reforms, the regulatory framework may still contribute to future facility incidents.

## II. THE AUSTRALIAN OFFSHORE PETROLEUM REGULATORY FRAMEWORK

The petroleum regulatory framework in Australia comprises multiple offshore jurisdictions, where both State/NT and federal governments, as a result of Australia's political and maritime history, undertake the regulation of offshore petroleum activities. Federal-state relations under Australian Federalism have been strained, particularly since the mid-1970s, as a result of the Commonwealth declaring sovereignty over the offshore jurisdiction when it enacted the *Sea and Submerged Lands Act 1973* ("SSLA"). The multiple jurisdictions, combined with friction between the regulators who are required to interact, have created regulatory burdens and regulatory gaps in offshore petroleum activities.

The Australian petroleum regulatory framework reflects the federalist nature of Australia and the constitutional arrangement set out in the Australian Constitution. From the first negotiations after oil finds in Bass Strait there has been tension between the States/NT and the Commonwealth regarding the regulation of offshore petroleum (oil and gas). Initial arrangements between the Commonwealth and States/NT for the exploration and production of offshore petroleum were created under the *1967 Petroleum Agreement* ("Petroleum Agreement").<sup>25</sup> The Petroleum

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<sup>23</sup> NAT'L COMM'N ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, *DEEPWATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING* vi (2011).

<sup>24</sup> *Id.* at 115.

<sup>25</sup> CONSTANCE D. HUNT, *THE OFFSHORE PETROLEUM REGIMES OF CANADA AND AUSTRALIA* 63 (1989). This agreement was forged between the Commonwealth, States, and affected territories and is officially known as the *Agreement Relating to the Exploration for and*



Agreement did not intend to create legal relationships enforceable in a court of law.<sup>26</sup> Rather, it encouraged petroleum activities through uniform legislative measures in Commonwealth Waters,<sup>27</sup> with all governments agreeing to cooperate to ensure regulation of offshore petroleum activities.<sup>28</sup>

The *Petroleum (Submerged Lands) Act 1967* (“PSLA”) gave legal effect to the Petroleum Agreement,<sup>29</sup> securing offshore petroleum development without having to resolve the jurisdictional issues between the Commonwealth and the States/NT.<sup>30</sup> The PSLA enacted a comprehensive legislative “code,” creating joint Commonwealth-State/NT administration of petroleum titles.<sup>31</sup> To reduce the capacity for the States/NT to go their own way, the provisions of the petroleum legislation were necessarily detailed,<sup>32</sup> granting each State/NT the legislative capacity to grant dual titles to oil companies under State/NT authority and delegated authority from the Commonwealth.<sup>33</sup> This joint management required the establishment of two authorities to regulate petroleum activities (“the JA/DA arrangement”):

- The Joint Authority (“JA”), which comprises the relevant Commonwealth Minister and the responsible State Minister, and;
- Designated Authority (“DA”), comprising the responsible State or Territory Minister.<sup>34</sup>

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*the Exploitation of, the Petroleum Resources, and Certain Other Resources, of the Continental Shelf of Australia and of Certain Territories of the Commonwealth and of Certain Other Submerged Land signed October 16, 1967. Id.*

<sup>26</sup> *Id.* at 64.

<sup>27</sup> For the definition of “Commonwealth Waters,” see *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)* s 5.

<sup>28</sup> HUNT, *supra* note 25, at 63.

<sup>29</sup> *Id.* at 64.

<sup>30</sup> Terrence Daintith, *Discretion in the Administration of Offshore Oil and Gas*, 2005 AUSTL. MINING AND PETROLEUM LAW ASS’N Y.B. 13.

<sup>31</sup> Terrence Daintith, *A Critical Evaluation of the Petroleum (Submerged Lands) Act as a Regulatory Regime*, 2000 AUSTL. MINING AND PETROLEUM LAW ASS’N Y.B. 91, 93.

<sup>32</sup> *Id.* at 93–94.

<sup>33</sup> *Id.* For a discussion and consideration of the regulatory framework in the pre-Montara era, see also Tina Hunter, *Australian Offshore Petroleum Regulation After the Varanus Island Explosion and the Montara Blowout—Drowning in a Sea of Federalism?*, 25 AUSTL. & N.Z. J. MAR. L. 69–89 (2011).

<sup>34</sup> *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)* ss 56 and 66 (Austl.) [hereinafter OPAGGSA]. Under ss 56(8) and (9) of OPAGGSA, the Commonwealth Minister alone is the JA for Commonwealth Waters, the external territories, and the offshore



Following the enactment of the *Sea and Submerged Lands Act 1973* and the consequential constitutional challenge by the state of New South Wales in the *Sea and Submerged Lands Case*,<sup>35</sup> sovereign rights over Australia's marine areas were vested in the Commonwealth. These events heightened friction between the Commonwealth and States/NT regarding regulatory control of Australia's maritime zones. A negotiated settlement between the Commonwealth and States/NT, the *Offshore Constitutional Settlement* ("OCS"), was agreed to in 1980, ushering in an era of "cooperative governance in a sea of federalism."<sup>36</sup>

The resulting legal framework from the OCS divided the regulation of offshore petroleum activities between the States/NT and Commonwealth Governments.<sup>37</sup> It was enacted at the State and Commonwealth level through mirror legislation (Commonwealth and State *Petroleum (Submerged Lands Acts)*),<sup>38</sup> where each State/NT government legislated with respect to offshore petroleum operations in identical terms to the Commonwealth petroleum legislation.<sup>39</sup> In addition, a plethora of other necessary legislation was enacted to enable the implementation of the OCS, thus conferring on the States/NT a virtually unfettered ability to enact laws up to three nautical miles from Baseline seaward.<sup>40</sup> Under the

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areas of each of those territories. Similarly, under ss 70(8) and (9) of OPAGGSA, the responsible Commonwealth Minister is also the DA for each of the territories and the offshore areas of those territories. Under s 68(1), the Commonwealth as DA of the external areas is able to delegate the regulation to an external territory to the NT. At the time of the Montara Blowout, the NT had been delegated as DA for the Ashmore and Cartier Reef offshore areas.

<sup>35</sup> *NSW v Commonwealth* (1975) 135 CLR 337 (Austl.).

<sup>36</sup> Nathan Evans, *Offshore Petroleum in Australia—Cooperative Governance in a Sea of Federalism*, 26 DALHOUSIE L.J. 175 (2003).

<sup>37</sup> ATTORNEY-GENERAL'S DEP'T, OFFSHORE CONSTITUTIONAL SETTLEMENT 6–8 (1980) (Austl.), <http://www.ag.gov.au/Internationalrelations/InternationalLaw/Pages/TheOffshoreConstitutionalSettlement.aspx> (last visited Apr. 9, 2014).

<sup>38</sup> *Petroleum (Submerged Lands) Act 1967* (Cth); *Petroleum (Submerged Lands) Registration Fees Act 1990* (WA); *Petroleum (Submerged Lands) Act 1982* (Vic); *Petroleum (Submerged Lands) Act 1982* (Qld); *Petroleum (Submerged Lands) Act 1982* (SA); *Petroleum (Submerged Lands) Act 1982* (Tas); *Petroleum (Submerged Lands) Act 1982* (NSW); *Petroleum (Submerged Lands) Taxation Act 1967* (NSW), as outlined in Michael Crommelin, *The Legal Character of Petroleum Production Licences in Australia*, in THE LEGAL CHARACTER OF PETROLEUM LICENCES: A COMPARATIVE STUDY 60, 62 (Terrence Daintith ed., 1981).

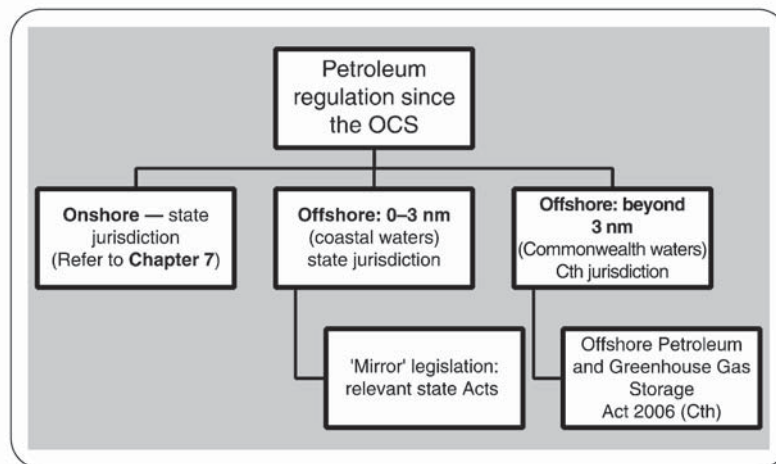
<sup>39</sup> Crommelin, *supra* note 38, at 62; *Bonser v La Macchia* (1969) 122 CLR 177 (Austl.).

<sup>40</sup> This legislation is outlined in *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) s 5(3), at 6–7. Required acts included *Coastal Waters (State Powers) Act 1980*; *Coastal Waters (Northern Territory Powers) Act 1980*; *Coastal Waters (State Title) Act 1980*; *Coastal Waters (Northern Territory Title) Act*; and *Offshore Minerals Act 1984*

agreed terms of the OCS, offshore petroleum activities are regulated through the JA/DA arrangement as follows:

- The States/NT regulate the waters wholly within the State/NT, such as bays and estuaries in accordance with Sections 8 and 10 of the Sea and Submerged Lands Act 1972 (*State Waters*);
- The States/NT regulate waters from the Baseline seaward to 3nm (*Coastal Waters*); and
- The Commonwealth regulates waters seaward of 3nm to the limits of the EEZ, 200nm from Baseline (*Commonwealth Waters*).

The OCS agreement remains in force, with the States/NT and Commonwealth jurisdictions outlined in Section 5 of OPAGGSA<sup>41</sup> and illustrated in Figure 1 below:



**Figure 1.** Australian Offshore Petroleum Regulatory Framework, 2014<sup>42</sup>

(Cth); see also R. CULLEN, *FEDERALISM IN ACTION: THE AUSTRALIAN AND CANADIAN OFFSHORE DISPUTES* 108–10 (1990).

<sup>41</sup> OPAGGSA, *supra* note 34, s 5.

<sup>42</sup> TINA HUNTER & JOHN CHANDLER, *PETROLEUM LAW IN AUSTRALIA* 132 (2013).

Prior to 2005, this negotiated regulatory structure meant that duplication occurred in the regulation and administration of worker and facility safety (collectively known as “OHS”) in the Australian offshore petroleum sector.

Initially, health and safety arrangements in offshore petroleum activities were shared between the Commonwealth and States/NT under the PSLA.<sup>43</sup> According to the PSLA, the regulation of health and safety on offshore petroleum facilities was a matter for the States/NT, which carried out the day-to-day regulation of offshore petroleum health and safety activities under a mix of Commonwealth Law (in Commonwealth Waters) and State Law (in Coastal and State Waters).<sup>44</sup> Until the 1990s, this safety regulatory approach was prescriptive, where the relevant States/NT and Commonwealth statutes specified the exact conditions for compliance with safety requirements on offshore facilities and the means by which they should be accomplished. This legislation prescribed specific laws that had to be complied with, and the regulator determined what was safe for the industry.<sup>45</sup>

Like many other petroleum-producing countries, the statutes governing offshore petroleum health and safety underwent significant re-fashioning in the 1970s. The amendments took place as a consequence of the Robens and Cullen Reports in the UK arising from the Sea Gem and Piper Alpha facility incidents respectively.<sup>46</sup> This resulted in a significant shift from the old-style prescriptive regulation to sanctions and enhanced inspection powers.<sup>47</sup> In 1991, the key outcomes of the Cullen Report were implemented in Australia.<sup>48</sup> This ushered in an era of reforms to the regulation of Australian offshore petroleum. However, these major reforms of Australia’s approach to offshore petroleum health and safety were somewhat difficult to implement, since the reforms in Australia occurred within the context of the OCS between the Commonwealth and

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<sup>43</sup> HUNT, *supra* note 25, at 63.

<sup>44</sup> *Id.*

<sup>45</sup> Patrick Brazil & Peter Wilkinson, *The Establishment of a National Offshore Petroleum Safety Authority*, 24 AUSTL. RES. & ENERGY L.J. 87, 88 (2005).

<sup>46</sup> LORD ROBENS, SAFETY AND HEALTH AT WORK: REPORT OF THE COMMITTEE 1970–1972 (1972); Preben H. Lindoe et al., *Robust Offshore Risk Regulation—An Assessment of US, UK, and Norwegian Approaches* (Paper presented at ESREL, June 25–29, 2012).

<sup>47</sup> Richard Johnstone, Michael Quinland & Maria McNamara, *Enforcing Upstream: Australian Health and Safety Inspectors and Upstream Duty Holders* 23 (National Research Centre for OHS Regulation, Australian National University, Working Paper No. 77, 2010).

<sup>48</sup> *Offshore Petroleum Safety*, AUSTL. DEPT RES., INDUS. & TOURISM, <http://www.innovation.gov.au/resource/UpstreamPetroleum/OffshorePetroleumSafety/Pages/default.aspx> (last visited Apr. 9, 2014).

States/NT rather than a unitary system such as the UK.<sup>49</sup> This meant that the Safety Case Regime (“SCR”) was implemented in a federal system, requiring a coordinated and harmonized approach under the shared Commonwealth-States/NT system regulating offshore petroleum activities.<sup>50</sup> When the safety reforms were initially implemented, there were multiple agencies in multiple jurisdictions regulating safety in offshore petroleum activities.<sup>51</sup>

Recognizing these regulatory challenges, the Commonwealth Minister for Resources commissioned a review of the progress of safety case implementation in the Australian offshore petroleum sector in the late 1990s.<sup>52</sup> Conducted by the former Chief Executive of the UK Health and Safety Executive Dr. Tony Barrell, the resulting report recommended safety regulation reform to achieve greater regulatory consistency within and between State/NT and Commonwealth government regulatory regimes.<sup>53</sup> The Commonwealth accepted the recommendations of the Barrell Report, commissioning a review of offshore petroleum safety arrangements in 1999. An independent review team of international offshore safety experts was assembled, and reported to the Commonwealth in March 2000.<sup>54</sup>

The Independent Review Team (“IRT”) concluded that:

the Australian legal and administrative framework, and the day-to-day application of this framework, for regulation of health, safety and environment in the offshore petroleum industry is *complicated and insufficient to ensure appropriate, effective and cost efficient regulation of the offshore petroleum industry*.<sup>55</sup>

The IRT was the first overall assessment of the Australian offshore petroleum regime and it clearly identified the inherent deficiencies of the existing regime. It stated that “much would require improvement for the regime to deliver world-class safety practice.”<sup>56</sup> Furthermore, the

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<sup>49</sup> TONY BARRELL, DEP’T PRIMARY INDUS. & ENERGY, SECOND REVIEW OF THE MANAGEMENT OF SAFETY IN THE OFFSHORE OPERATIONS OF BHP PETROLEUM (1997) (Austl.).

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> ODD BJERRE FINNESTAD ET AL., DEP’T INDUS., SCIENCE & RES., OFFSHORE SAFETY & SEC., PETROLEUM & ELEC. DIV., REPORT OF THE INDEPENDENT REVIEW TEAM (2000) (Austl.).

<sup>55</sup> *Id.* at 4 (emphasis added).

<sup>56</sup> *Id.*

IRT found that the greatest impediment to the delivery of world-class safety practice was the number of acts, regulations, and directions regulating offshore petroleum activities. In addition, the numerous jurisdictions as a result of the OCS and differing sets of legal documents for each jurisdiction created legislative overlaps and inconsistencies.<sup>57</sup> Finally, the IRT identified that State/NT safety regulators lacked regulatory skills, capacity, and consistency and did not have a clear view of their role.<sup>58</sup> Similarly, the IRT concluded that the Commonwealth did not have the sufficient resources, technical expertise, credibility, or authority to drive the changes required to attain world-class safety practice.<sup>59</sup> In short, the IRT identified a regulatory system that posed a significant risk to offshore petroleum health, safety, and the environment.<sup>60</sup>

The IRT made three recommendations to improve the safety regime. It recommended that the current Commonwealth safety framework of legal documents be revised.<sup>61</sup> Furthermore, it recommended that the current safety regulatory framework be revised.<sup>62</sup> Most importantly, it recommended the development of a single petroleum safety regulator to oversee safety in Commonwealth Waters.<sup>63</sup>

The Commonwealth agreed with the recommendations of the IRT, realizing that a single regulator would bring efficiencies through economies of scale, uniform procedures, and greater consistency in the interpretation and application of regulations and guidelines.<sup>64</sup> This would also reduce regulatory burden on industry.<sup>65</sup> Seeking to establish the national regulator, the Ministerial Council on Mineral and Petroleum Resources ("MCMPR") endorsed the creation of a single safety regulator, noting that such a joint offshore authority would bring significant benefits, ensure better safety outcomes for individuals working on offshore platforms, and reduce risks to the environment.<sup>66</sup>

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<sup>57</sup> *Id.* at 4, 41.

<sup>58</sup> *Id.* at 4–5, 18–19.

<sup>59</sup> *Id.* at 4–5.

<sup>60</sup> FINNESTAD ET AL., *supra* note 54, at 39.

<sup>61</sup> *Id.* at 40.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> MINISTERIAL COUNCIL ON MINERALS AND PETROLEUM RESOURCES, MCMPR COMMUNIQUÉ: SUMMARY OF MINISTERIAL COUNCIL MEETING 13 SEPTEMBER 2002, PERTH (2002), *available at* [http://www.nopsema.gov.au/assets/document/Final\\_Communique\\_Sept02.pdf](http://www.nopsema.gov.au/assets/document/Final_Communique_Sept02.pdf).

<sup>65</sup> *Id.*

<sup>66</sup> *Id.* at 1.

Whilst the Commonwealth favored the establishment of a joint national regulator, the States/NT strongly argued for the retention of the existing disaggregated arrangements.<sup>67</sup> However, workforce representatives and the Australian Petroleum Production and Exploration Association (“APPEA”), the peak industry body, both indicated that the case for the continuation of existing arrangements was neither “compelling nor convincing.”<sup>68</sup> Furthermore, workplace representatives were convinced that only the development of a single national safety authority would “achieve effective uniform processes across jurisdictions.”<sup>69</sup> The Commonwealth agreed that the creation of a single national regulator in Commonwealth Waters would be most beneficial, although it also recognized that such arrangements may “result in a number of undesirable effects for the States/NT and for industry operating in both Commonwealth’ and State/NT jurisdictions.”<sup>70</sup> Accepting these undesirable effects, the Commonwealth proposed the creation of an independent regulator regulating Commonwealth, State, and Coastal Waters<sup>71</sup> with the option of States/NT conferring their powers over Coastal and State Waters on the Commonwealth.<sup>72</sup>

The Commonwealth’s decision to establish NOPSA led to the introduction and passing of two Commonwealth Acts: the *Petroleum (Submerged Lands) Amendment Act 2003*, to make substantial legislative amendments to the PSLA to establish NOPSA,<sup>73</sup> and the *Offshore Petroleum (Safety Levies) Bill 2003*, to provide for full cost recovery to industry.<sup>74</sup> As part of the legislative reforms to the PSLA, the role of NOPSA was set out, including its structure and governance.<sup>75</sup> Secondly, amendments were made to the occupational health and safety provisions of the PSLA, inserted in 1993 when the SCR was implemented. Furthermore, vast legislative reform to all State/NT mirror legislation was required in order to implement the new national regulator in State and Coastal Waters where those States conferred upon the Commonwealth the right to regulate offshore petroleum safety in those waters.

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<sup>67</sup> DEP’T INDUS., SCI., & RES., OFFSHORE SAFETY & SEC., PETROLEUM & ELEC. DIV., FUTURE ARRANGEMENTS FOR THE REGULATION OF OFFSHORE PETROLEUM SAFETY 64 (2001) (Austl.) [hereinafter FUTURE ARRANGEMENTS].

<sup>68</sup> *Id.* at 7.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.* at 8.

<sup>71</sup> *Id.* at 20.

<sup>72</sup> *Id.* at 60.

<sup>73</sup> *Petroleum (Submerged Lands) Amendment Act 2003* (Cth) pt IIIC, div 1, 150XA (Austl.).

<sup>74</sup> *Offshore Petroleum (Safety Levies) Bill 2003* (Cth) s 11 (Austl.).

<sup>75</sup> *Petroleum Amendment Act 2003* pt IIIC, div 2.



The necessary legislative reforms were completed and NOPSA was established on January 1, 2005.<sup>76</sup> Most, but not all, States/NT jurisdictions conferred the regulation of safety in State and Coastal Waters upon NOPSA.<sup>77</sup> Furthermore, NOPSA was only charged with safety of offshore petroleum facilities, whilst well control and environmental regulation remained with the States under the JA/DA arrangement.<sup>78</sup>

At the time of the Varanus Island Explosion and the Montara Blowout, multiple agencies regulated offshore petroleum facilities and safety:

- Day-to-day petroleum operations, pipelines, and subsea facilities in Commonwealth Waters are regulated by a JA, comprising the relevant Commonwealth and State Ministers. The JA delegates the regulation to a DA, comprising the State Minister and that Minister's agency;
- Day-to-day petroleum operations, pipelines, and subsea facilities in Coastal and State Waters are regulated by the relevant state agency;
- Environmental aspects of offshore petroleum activities in all waters are regulated by the relevant State or the Commonwealth department, depending on the jurisdiction, and;
- Safety of all offshore facilities in all Waters except Western Australia State and Coastal Waters are regulated by NOPSA.<sup>79</sup>

An additional regulatory layer consists of the acts and regulations addressing the regulation of the environment, natural and cultural heritage, and native title rights.

The multiple agencies and jurisdictions in this regulatory framework relied on the States/NT performing their various responsibilities and discharging their obligations in a competent manner. However, with so many regulators and multiple jurisdictions, a number of inconsistencies occurred, particularly in terms of regulatory approaches, procedures, and resources available to each of the regulators when discharging their

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<sup>76</sup> *Id.* at Commencement.

<sup>77</sup> *Id.*

<sup>78</sup> FUTURE ARRANGEMENTS, *supra* note 67, at 28.

<sup>79</sup> *Id.*



obligations with respect to the regulation of offshore petroleum activities.<sup>80</sup> These were highlighted by the MCI.

The establishment of NOPSA was designed to provide numerous benefits to the regulation of health and safety on offshore petroleum facilities.<sup>81</sup> Most importantly, it sought to create a single body that regulated safety for offshore petroleum activities, rather than the plethora of regulation that existed prior to the establishment of NOPSA. However, the establishment of NOPSA created vertical and horizontal regulatory disjuncture—areas where there was either regulatory overlap or regulatory gaps.

Prior to Varanus and Montara, the vertical regulation of petroleum activities was split between regulatory agencies, with NOPSA responsible for the regulation of safety on facilities, whilst the regulation of the well and well operations (subsea regulation) was the responsibility of the DA. In addition, where the States had not conferred regulatory powers for their State and Coastal Waters to NOPSA, safety in these waters was regulated by the States/NT from the Baseline seaward to three nautical miles, where NOPSA's jurisdiction then commenced.<sup>82</sup> Because Western Australia had not conferred powers to NOPSA for Coastal and State Waters and Islands, the regulation of occupational health and safety was not uniform.<sup>83</sup> Adding to this regulatory disjuncture was environmental regulation under the *Environmental Protection and Biodiversity Conservation Act 1999* ("EPBCA"), the overarching environmental regulatory framework for State, Coastal, and Commonwealth Waters, which operates in conjunction with State/NT environmental legislation.<sup>84</sup>

Whilst the regulation of the safety of offshore petroleum facilities in Australia appeared increasingly harmonized with the establishment of NOPSA in 2005, several reports, as well as the Varanus and Montara incidents, tell another story. Since 2008, there have been several detailed analyses of the regulation of offshore petroleum facilities with all reports finding that the existing regulatory arrangements fail to demonstrate

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<sup>80</sup> DEP'T RES., ENERGY & TOURISM, SUBMISSION TO THE MONTARA COMMISSION OF INQUIRY 2.34 (2010) (Austl.), available at <http://www.montarainquiry.gov.au/downloads/SUBM.3005.0001.0001.pdf>.

<sup>81</sup> *Petroleum Amendment Act 2003*, supra note 73, at pt IIIC, div 1, 150XA.

<sup>82</sup> FUTURE ARRANGEMENTS, supra note 67, at 20.

<sup>83</sup> PRODUCTIVITY COMM'N, REVIEW OF REGULATORY BURDEN ON THE UPSTREAM (OIL AND GAS) SECTOR: RESEARCH REPORT XXXII (2009) (Austl.).

<sup>84</sup> *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) ch 2, pt 3, div 1, sub-div F (Austl.).

best practice standards. The 2008 review of NOPSA's operations ("2008 NOPSA Report") concluded that NOPSA had made good progress in building a world-class OHS regime.<sup>85</sup> However, it also articulated that to reduce the risk of a CFIF, NOPSA's legislative responsibility needs to be extended to cover the complete hydrocarbon chain (from well to a transport transfer point or a system boundary), and that retaining multiple regulators was not best practice.<sup>86</sup>

The Australian Productivity Commission also considered regulation of safety in the offshore jurisdiction in its 2009 *Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector* ("PC Report").<sup>87</sup> It criticized the regulatory arrangements of the offshore petroleum sector, describing the regime as "complex."<sup>88</sup> This complexity was illustrated by highlighting that twenty-two petroleum and pipeline laws applied at both the Commonwealth and State/NT levels with more than 150 statutes governing upstream petroleum activities in such areas as occupational health and safety, native title, and environmental protection.<sup>89</sup> Most importantly, the report identified that well over fifty State, Commonwealth, and Territory government agencies regulate upstream petroleum activities, incorporating the regulation of health and safety, facility integrity, resource management, well operations, and environmental issues.<sup>90</sup>

The PC Report concurred with the 2008 NOPSA Report, concluding that the legislative coverage of NOPSA should be extended to include the integrity of all offshore facilities, including pipelines, subsea equipment, and wells, as regulatory duplication and complexity arising from the framework of multiple regulators creates unnecessary economic costs.<sup>91</sup> This is because industry is required to comply with three sets of regulatory frameworks—one for occupational health and safety, one for well, facility and pipelines integrity, and a third for environmental assessment, compliance, and monitoring, creating regulatory overlap, complexity, and inconsistency.<sup>92</sup>

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<sup>85</sup> MAGNE OGNEDAL ET AL., REVIEW OF THE NATIONAL OFFSHORE PETROLEUM SAFETY AUTHORITY OPERATIONAL ACTIVITIES: REPORT OF THE INDEPENDENT REVIEW TEAM 157 (2008) (Austl.).

<sup>86</sup> *Id.* at 6, 10.

<sup>87</sup> PRODUCTIVITY COMM'N, *supra* note 83.

<sup>88</sup> *Id.* at XXXIII.

<sup>89</sup> *Id.* at 50.

<sup>90</sup> *Id.* at 56.

<sup>91</sup> *Id.* at 167.

<sup>92</sup> *See id.*

## III. A CONTRIBUTING FACTOR: REGULATION OF WELL INTEGRITY

A major area of regulatory inconsistency has been well regulation. In its submission to the Productivity Commission in 2009, APPEA concluded that the area requiring major reform is the administration of WOMPs, subsea equipment and pipelines.<sup>93</sup> This reform was required because regulatory responsibilities for these activities were divided between the DAs and NOPSA and these activities carry the most risks to the integrity of a facility.<sup>94</sup> APPEA also noted that regulatory interaction and uniformity is critical to the safety performance of operations and should be regulated by a single body.<sup>95</sup>

The PC report concluded that the sum effect of the large number of statutes regulating offshore petroleum, split over a large number of regulatory bodies, is a regulatory burden for stakeholders and regulatory inconsistencies.<sup>96</sup> Such inconsistencies, gaps, and complexities may result in either regulatory duplication or, worse still, in incidents at offshore facilities.<sup>97</sup> The Varanus Island and Montara incidents served to demonstrate the effects of the Australian regulatory structure.

The investigation into the Varanus Island explosion concluded that “the pipe rupture and explosion could have been avoided if facility integrity had been managed by a single agency,” instead of together by NOPSA and WADMP, “since a single regulator would have been responsible for the facility and the pipelines carrying the gas from the production platform to markets onshore.”<sup>98</sup> Essentially, the horizontally disjunctive regulatory system in force at the time of the Varanus explosion, which split regulation of the pipeline between State and Commonwealth jurisdiction was a major contributor to the explosion.<sup>99</sup> Furthermore, an assessment on the effectiveness of Australian offshore petroleum safety regulation by Kym Bills and David Agostini conducted in 2009<sup>100</sup> after

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<sup>93</sup> AUSTL. PETROLEUM PROD. & EXPLORATION ASS'N, PRODUCTIVITY COMMISSION REVIEW OF REGULATORY BURDEN ON THE UPSTREAM PETROLEUM (OIL AND GAS) SECTOR 20 (2008) [hereinafter APPEA], available at [http://www.pc.gov.au/\\_data/assets/pdf\\_file/0019/83422/sub016.pdf](http://www.pc.gov.au/_data/assets/pdf_file/0019/83422/sub016.pdf).

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> *Id.* at 7, 35.

<sup>97</sup> *Id.* at 35.

<sup>98</sup> Hunter, *supra* note 33, at 77.

<sup>99</sup> *Id.*

<sup>100</sup> KIM BILLS & DAVID AGOSTINI, OFFSHORE PETROLEUM SAFETY REGULATION: MARINE ISSUES iii (2009), available at [http://www.innovation.gov.au/resource/Documents/upstream-petroleum/safety/Marine%20Issues\\_web.pdf](http://www.innovation.gov.au/resource/Documents/upstream-petroleum/safety/Marine%20Issues_web.pdf).

the Varanus Island CFIF, noted that the failure to vertically integrate regulation of a facility to include well integrity was detrimental to offshore petroleum safety. Consequently, the assessment stated that the SCR regulating pipelines does not presently represent best practice.<sup>101</sup> The assessment also noted that in complex, high hazard industries such as offshore oil and gas, society expects a robust regulatory system where operators maintain safety to minimize risk of a CFIF, and regulators are required to assure the public that this is being done.<sup>102</sup>

The Montara Blowout in particular demonstrated the difficulties associated with the splitting of the vertical regulation of wells and facilities between the DA and NOPSA. The MCI noted that the immediate causes of the Montara incident were poor cementing of the cement shoe and a failure of the float valves.<sup>103</sup> Essentially, the integrity of the well was compromised, leading to loss of well control and, eventually, a blowout. The MCI identified that the root cause was a systemic failure of the management systems and non-compliance with the operating procedures that had been set out in the facility safety case.<sup>104</sup> The MCI blamed the failure of the operator to adhere to the system's design and the failure of the regulator to ensure compliance to the safety case.<sup>105</sup> In this case, the NTDOR, as regulator, was found by the MCI to have failed in its role of ensuring compliance with the SCR and maintaining good oilfield practice.<sup>106</sup>

The MCI rightly identified that the immediate cause of the Montara Blowout was the failure of the cement shoe and the failure of the float valves, leading to loss of well control.<sup>107</sup> However, this Article contends that the MCI erred in identifying systemic failure of the management systems and non-compliance with the operating procedures set out in the facility SCR as a root cause of the Montara Blowout. NOPSA notes that the SCR is an objective or goal-setting regime for the management of petroleum facilities.<sup>108</sup> This is based on the principle that legislation sets the broad safety goals to be attained and the operator of the facility develops

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<sup>101</sup> *Id.* at 17.

<sup>102</sup> PRODUCTIVITY COMM'N, *supra* note 83, at 273.

<sup>103</sup> BORTHWICK, *supra* note 19, at 7.

<sup>104</sup> *Id.* at 6.

<sup>105</sup> *Id.* at 6, 152.

<sup>106</sup> *Id.* at 14, 16–17.

<sup>107</sup> *Id.* at 7.

<sup>108</sup> See *Safety Cross Approach*, NAT'L OFFSHORE PETROLEUM SAFETY & EVNT'L MGMT. AUTH., <http://www.nopsema.gov.au/safety/safety-case/safety-case-approach/> (last visited Apr. 9, 2014).

the most appropriate method of achieving those goals.<sup>109</sup> This system thus requires a safety case document to be prepared by the facility operator, proving the safety of the facility.<sup>110</sup> It applies the principle, as outlined by Lord Cullen in the Piper Alpha Report, that those who create the risk must manage it.<sup>111</sup> The safety case document is required to identify hazards and risks, describe how the risks are to be controlled, and describe the safety management system in place to ensure those controls are effectively and consistently applied.<sup>112</sup> Therefore, it is a facility operator's role to assess facility processes, procedures, and systems to identify and evaluate risks and to implement appropriate controls to remove or reduce those risks.<sup>113</sup>

At the time of these incidents, the SCR was not applied to the management of wells; rather it was confined only to the facilities that drill the wells. Therefore, whilst the SCR is applied to offshore installations and facilities, it is not, and has not, been applied to the control of wells and WOMPs in Australia and many other jurisdictions, including the USA and the UK. Rather, wells are regulated to the standard of GOP,<sup>114</sup> a term defined in the OPAGGSA as "all those things that are generally accepted as good and safe in: (a) the carrying on of exploration for petroleum or (b) petroleum recovery operations."<sup>115</sup> Legislative provisions pertaining to WOMPs and well management prior to Varanus and Montara were outlined in the *Petroleum (Submerged Lands) (Management of Well Operations) Regulations 2004*.<sup>116</sup> Consequently, there was a vertical regulatory disjuncture between the regulation of offshore petroleum facilities integrity under the SCR and the regulation of WOMPs and well integrity under GOP.

The inquiries into the Varanus and Montara incidents attributed causation of both incidents to the existing regulatory framework, thus demonstrating that the structure and function of the petroleum regulatory framework significantly contributed to facility incidents in Australia's

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<sup>109</sup> See BORTHWICK, *supra* note 19, at 19.

<sup>110</sup> *Id.*

<sup>111</sup> WILLIAM DOUGLAS CULLEN, THE PUBLIC INQUIRY INTO THE PIPER ALPHA DISASTER (1990).

<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011* (Cth) reg 5.08(1)(b) (Austl.) [hereinafter RMA].

<sup>115</sup> OPAGGSA, *supra* note 34, at s 7.

<sup>116</sup> *Petroleum (Submerged Lands) (Management Well Operations) Regulations 2004* (Cth) reg 3 (Austl.).

offshore petroleum sector. In particular, the Montara Blowout and subsequent MCI demonstrated to the public that the robust regulatory system that should have been inherent was in fact absent. The MCI also concurred with the 2008 recommendations from the 2008 NOPSA Report, the 2009 recommendations of the Productivity Commission, and the recommendations of Bills and Agostini in 2009 that the legislated coverage of NOPSA should be extended to cover the whole of the petroleum production chain, similar to the Norwegian approach to facility integrity regulation.<sup>117</sup>

#### IV. RESPONSE TO THE VARANUS ISLAND AND MONTARA INCIDENTS

##### A. *Legislative Reform*

The Varanus and Montara incidents prompted the Australian government to proceed with regulatory reform of offshore petroleum legislation. In 2009, the Commonwealth Government embarked on a program to consolidate the numerous existing offshore petroleum regulations and guidelines. The *Offshore Petroleum and Greenhouse Gas (Safety) Regulations (2009)* brought together safety regulations into a single regulation and repealed the *Petroleum (Submerged Lands) (Occupational Health and Safety) Regulations 1993*, the *Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996*, and the *Petroleum (Submerged Lands) (Diving Safety) Regulations 2002*.<sup>118</sup> Also in 2009, significant amendments were made to the *Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations 1999*, and the regulations were renamed the *Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations 2009* (although the regulations had commenced on 1 October 1999).<sup>119</sup> In response to the Montara Blowout, the amendments included changes regarding requirements for oil spill contingency plans.<sup>120</sup> Significantly, the final part of the reform to offshore petroleum regulations was completed in April 2011. This included:

- The *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Datum) Regulations 2010*;

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<sup>117</sup> BORTHWICK, *supra* note 19, at 19–20.

<sup>118</sup> *Offshore Petroleum and Greenhouse Gas (Safety) Regulations (2009)* (Cth) reg 1.3 (Austl.).

<sup>119</sup> *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) reg 2 (Austl.).

<sup>120</sup> *Id.* at Reg. 14(8).



- The *Offshore Petroleum and Greenhouse Gas Storage (Management of Greenhouse Gas Well Operations) Regulations 2010*;
- The *Offshore Petroleum and Greenhouse Gas Storage Regulations 1985*;
- The *Petroleum (Submerged Lands) (Data Management) Regulations 2004*;
- The *Petroleum (Submerged Lands) (Datum) Regulations 2002*;
- The *Petroleum (Submerged Lands) (Management of Well Operations) Regulations 2004*; and
- The *Petroleum (Submerged Lands) (Pipelines) Regulations 2001*.<sup>121</sup>

Existing regulations were combined and amended, becoming the *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011* (“Resource Management Regulations”).<sup>122</sup>

The Commonwealth government also introduced reforms to the OPAGGSA and related regulations regarding the management of well operations and WOMPs. Legislation introduced into Federal Parliament in February 2010 as part of the reforms to the OPAGGSA under the *Offshore Petroleum and Greenhouse Gas Storage Legislation Amendment (Miscellaneous Measures) Bill 2010* (“Offshore Petroleum Bill”) sought to augment the powers of NOPSA by conferring functions and powers in relation to the non-OHS structural integrity of facilities, wells, and well-related equipment.<sup>123</sup> Under the amendments proposed in the Offshore Petroleum Bill, the structural integrity of wells (including WOMPs) that previously fell outside of the auspices of NOPSA were to be regulated by NOPSA.<sup>124</sup> Importantly, this provided an integrated approach to petroleum regulation. The bill was passed, conferring the regulation of well management and well integrity on NOPSA, thus enabling NOPSA to approve or reject WOMPs, as well as to regulate individual well activities.<sup>125</sup>

This regulatory reform integrated the vertical regulation of petroleum activities (for example, the regulation of facility activities and

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<sup>121</sup> RMA, *supra* note 114, at reg 1.03.

<sup>122</sup> *Id.*

<sup>123</sup> Explanatory Memorandum, Offshore Petroleum and Greenhouse Gas Storage Legislation Amendment Bill 2010 (Cth) 2 (Austl.).

<sup>124</sup> *Id.* at 2–3.

<sup>125</sup> See *Well Integrity*, NAT'L OFFSHORE PETROLEUM SAFETY AUTH., <http://www.nopsema.gov.au/well-integrity/> (last visited Apr. 9, 2014).



well activities by a single regulator).<sup>126</sup> This was a significant improvement on the vertical regulatory disjuncture that had previously existed, where platform and facilities were regulated by NOPSA and the DA-managed WOMPs/Well Operations. However, it is important to note that there is still some vertical regulatory disjuncture in the regulation of offshore petroleum activities. This disjuncture arises due to the application of differing standards for the regulation of facilities and wells. Petroleum facilities are regulated by the SCR, which requires an operator to reduce the risk of harm according to the *As Low as Reasonably Practicable* (“ALARP”) standard.<sup>127</sup> Effectively, the application of the SCR and ALARP applies a “best practice” standard, where the risk of facility incidents is reduced to as low as reasonably practicable.<sup>128</sup>

The SCR is currently not applied to the regulation of wells. The regulation of well operations offshore is not undertaken in accordance with the SCR, although some elements of the SCR are incorporated in well integrity regulation. When referring to well integrity, Regulation 5.02 of the RMA Regulations requires that a bore is “subject only to risks that have been reduced to a level that is as low as reasonable practicable.”<sup>129</sup>

Rather than requiring the reduction of well blowout and loss of well control to ALARP, the regulatory standards in Australia for wells that are enforced are that of GOP: all those things that are generally accepted as good and safe in the carrying on of petroleum activities. The regulatory standard for well operations and activity outlined in Regulation 5.08 of the RMA Regulations requires that risks are identified and managed according to sound engineering principles, standards, specifications and good oilfield practice.<sup>130</sup> Furthermore, Regulation 5.09(1) requires operators to demonstrate that well activities and ongoing operations works are carried out in accordance with GOP.<sup>131</sup> This is a standard that is not defined;<sup>132</sup> it is dependent upon industry practice. The difficulty in the

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<sup>126</sup> *Id.*

<sup>127</sup> APPEA, *supra* note 93, at 21.

<sup>128</sup> *Id.*

<sup>129</sup> RMA, *supra* note 114, at reg 5.02.

<sup>130</sup> *Id.* at reg 5.08(1)(b).

<sup>131</sup> *Id.* at reg 5.09(1).

<sup>132</sup> The foremost petroleum dictionary *Slumberger's Oilfield Glossary* does not define the term “Good Oilfield Practice,” nor does it define “accepted practice” or “oilfield practice.” The Commonwealth issued a guidance note regarding GOP, but it does little to provide a clear definition of GOP. See NAT'L OFFSHORE PETROLEUM SAFETY AUTH., GOOD OILFIELD PRACTICE: A GUIDELINE IN RELATION TO THE OFFSHORE PETROLEUM AND GREENHOUSE GAS STORAGE ACT 2006 1 (2013), available at [http://www.nopta.gov.au/\\_documents/guidelines/good-oilfield-practice-guideline.pdf](http://www.nopta.gov.au/_documents/guidelines/good-oilfield-practice-guideline.pdf).

term lies in its interpretation; is the term to be interpreted as the highest standard of operation and behavior, or as the lowest common denominator for standard of operation and company behavior?<sup>133</sup> Given that the Commonwealth definition of GOP is “all those things that are generally accepted as good and safe,” it may be seen that GOP in Australia is the lowest common denominator for standard of operation rather than the highest standard of operation where the risk of an incident is reduced to as low as reasonably practicable.

Unless and until well activities are regulated to a maximum standard similar to the ALARP principle under the SCR (where the risk of well blowout or loss of control is reduced to as low as reasonably practicable), there is an increased likelihood that well blowouts will occur. Indeed, the United States National Academy of Science, in its 2010 investigation into drilling safety,<sup>134</sup> concluded that, given the critical role that margins of safety play in maintaining well control, guidelines should be established to ensure that the design approach incorporates protection against the various risks associated with drilling,<sup>135</sup> recommending that good operational and best practices should be used in the construction of a well.<sup>136</sup>

#### *B. Establishment of a Commonwealth Regulatory System*

As a consequence of the PC Report, NOPSA Report, Bills and Agostini’s Report, and findings from the Varanus and Montara Inquiries, the Commonwealth Government announced in August 2009 that it intended to create a national offshore petroleum regulator (“NOPR”), to commence operations by January 1, 2012.<sup>137</sup> The Commonwealth noted that fundamental institutional reform for offshore petroleum regulation was required as a result of the JA/DA arrangement, which led to significant regulatory duplication, slow decision-making, unclear regulatory accountability, inefficient use of regulatory resources, inconsistent decision-making across Commonwealth offshore areas, and resistance to

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<sup>133</sup> Alexandra S. Wawryk, *International Environmental Standards in the Oil Industry: Improving the Operations of Transnational Oil Companies in Emerging Economies*, 20 J. ENERGY NAT. RES. L. 402, 430 (2002).

<sup>134</sup> NAT’L ACADEMY OF SCI., *MACONDO WELL—DEEPWATER HORIZON BLOWOUT: LESSONS FOR IMPROVING OFFSHORE DRILLING SAFETY* (2010), available at <http://www.wellintegrity.net/Documents/NAE-NRC%20Report%202011-12-14.pdf>.

<sup>135</sup> *Id.* at 43.

<sup>136</sup> *Id.* at 44.

<sup>137</sup> DEPT RES., ENERGY & TOURISM, COMMONWEALTH GOVERNMENT RESPONSE TO THE PRODUCTIVITY COMMISSION REVIEW 8–9 (2011) (Austl.) [hereinafter RESPONSE TO PRODUCTIVITY COMM’N REVIEW].

reform.<sup>138</sup> Furthermore, the Commonwealth noted that the creation of a national offshore petroleum regulator had the potential to significantly reduce the time for approvals processes by reducing administrative duplication, streamlining regulatory processes, providing greater transparency in decision-making, and consolidating resources.<sup>139</sup> Demonstrating its commitment to institutional reform, the Commonwealth declared in February 2011 that:

[I]n dealing with recent approvals under the Act and the uncontrolled release of oil and gas from the Montara Wellhead Platform in the Timor Sea, it has become more clearly apparent that decisions relating to safety, environmental management and resource management have significant overlapping implications.<sup>140</sup>

To fund the implementation of a NOPR, amendments to the OPAGGSA passed under the *Offshore Petroleum and Greenhouse Gas Storage Legislation Amendment (Miscellaneous Measures) Act 2010* enabled the Commonwealth to retain money raised from industry registration fees under the *Offshore Petroleum and Greenhouse Gas Storage (Registration Fees) Act 2006*, rather than being returned to the States/NT.<sup>141</sup>

Peak industry body APPEA strongly expressed the view that NOPSA and the yet to be created NOPR should be a single entity with a number of practical and administrative benefits that would flow from a single regulatory authority and strong synergies in the regulation of safety and environment.<sup>142</sup> APPEA's position supported the findings of the MCI, which recommended that the roles of NOPSA and the NOPR be combined.<sup>143</sup> This established a single regulatory authority responsible for safety, well integrity, and environmental plans, whilst industry policy and resource development would reside with government agencies.<sup>144</sup>

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<sup>138</sup> *Id.*

<sup>139</sup> NAT'L OFFSHORE PETROLEUM TITLES ADM'R, COST RECOVERY IMPACT STATEMENT: 1 NOVEMBER 2013 – 30 JUNE 2016 12 (2013) (Austl.).

<sup>140</sup> RESPONSE TO PRODUCTIVITY COMM'N REVIEW, *supra* note 137.

<sup>141</sup> Sharon Wilson et al., *OPGGSA Amendment Update—Miscellaneous Measures Bill*, LEXOLOGY (Apr. 14, 2010), <http://www.lexology.com/library/detail.aspx?g=83cfbeb2-beab-4d53-8b17-bd609a868b6e> (last visited Apr. 9, 2014).

<sup>142</sup> RESPONSE TO PRODUCTIVITY COMM'N REVIEW, *supra* note 137.

<sup>143</sup> BORTHWICK, *supra* note 19, at 20.

<sup>144</sup> *Id.*

After much contemplation regarding the most suitable structure for a national petroleum regulator, the MCMPR considered the Commonwealth's proposed regulatory reform in February 2011. The recommended reforms tabled at the meeting sought to expand NOPSA's powers to incorporate environmental management, with the enlarged regulator to be called the National Offshore Petroleum Safety and Environmental Management Authority ("NOPSEMA"), and a new National Offshore Petroleum Titles Authority ("NOPTA").<sup>145</sup> The MCMPR enforced the proposed regulatory structure, rejecting the industry call for a single safety and title regulator. By accepting the Commonwealth reform proposals, the MCMPR endorsed the splitting of regulatory functions between NOPSEMA and the new NOPTA (similar to other petroleum jurisdictions, including the UK and Norway), as well as retaining the existing JA arrangement to ensure the relevant State/NT ministers retained a voice in offshore petroleum activities adjacent to their State and Coastal Waters.

Under the NOPSEMA/NOPTA reform proposed by the Commonwealth:

- The JA would be retained for key title decisions;
- NOPTA, an authority within the Department of Resources, Energy and Tourism advises the JA on resource titles, registration of titles, and collection of data; and
- The expanded NOPSEMA regulates well and pipeline integrity, environment plans, and day-to-day operations of petroleum activities within Commonwealth Waters.<sup>146</sup>

Under this model, the regulatory functions of environmental plans and compliance under the OPAGGSA were moved from the JA/DA arrangement to NOPSEMA. The Federal Department of Sustainability, Environment, Water, Population and Communities remains the regulator of environmental approvals and compliance under the *Environment Protection and Biodiversity Conservation Act 1999*.<sup>147</sup>

The legislative reform required to implement the new regulatory framework was implemented through the passing of the *Offshore Petroleum and Greenhouse Gas Storage Amendment (National Regulator) Act*

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<sup>145</sup> RESPONSE TO PRODUCTIVITY COMM'N REVIEW, *supra* note 137, at 9.

<sup>146</sup> *Id.*

<sup>147</sup> *Id.*

2011 and amendment of OPAGGSA as well as other relevant acts and regulations. The enactment of the *National Regulator Act* established the expanded NOPSEMA and the new NOPTA, both commencing their regulatory role on January 1, 2012. From January 2012, the regulatory framework for offshore petroleum activities comprises:

- In Commonwealth Waters: NOPSEMA, for environmental management and safety, NOPTA (which replaced the DA) for title administration, and the existing JA;
- In Coastal Waters: NOPSEMA (if states wish to confer OHS, well and structural integrity, and environmental functions. Most States, with the exception of Western Australia, conferred well and OHS regulation on NOPSEMA), NOPTA, and the JA; and
- In State Waters: Regulation by the State regulator (or NOPSEMA/NOPTA, if conferred to the Commonwealth). Western Australia has retained the regulation of petroleum activities in State Waters.

Following enactment of the *Offshore Petroleum and Greenhouse Gas Storage Amendment (National Regulator) Act 2011*, the establishment of NOPTA, and the enlargement of the role of NOPSA into NOPSEMA, the Minister for Resources, Energy and Tourism declared that: “the reports of the Montara Commission of Inquiry, the Productivity Commission, and Bills and Agostini all pointed to the need for one national body to have responsibility for regulating offshore activities if we are to improve safety and mitigate the risk of major incidents in the future.”<sup>148</sup>

However, it is also important to note that numerous reports, including the 2008 NOPSAs Report, the OPC Report, and the Bills and Agostini Report, have all reiterated the need to establish horizontally integrated regulation of petroleum activities across all jurisdictions and across the entire upstream chain.<sup>149</sup> In particular, the 2008 NOPSAs Report cautioned against multiple regulators, noting that:

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<sup>148</sup> Esmarie Swanepoel, *Senate Gives Nod to Single Offshore Petroleum Regulator*, ENGINEERING NEWS (Sept. 16, 2011), <http://www.engineeringnews.co.za/print-version/senate-gives-nod-to-single-offshore-petroleum-regulator-2011-09-16> (quoting the Resources and Energy Minister, Martin Ferguson).

<sup>149</sup> PRODUCTIVITY COMM'N, *supra* note 83; BILLS & AGOSTINI, *supra* note 100; OGNEDAL, GRIFFITHS & LAKE, *supra* note 85.

[T]o reduce the risk of a catastrophic facility integrity failure (CFIF), NOPSA's legislative responsibility needs to be extended to cover the complete hydrocarbon chain (from well to a transport transfer point or a system boundary), and retaining multiple regulators was not best practice.<sup>150</sup>

V. HAS THE LEGISLATIVE RESPONSE TO VARANUS ISLAND AND MONTARA REDUCED THE LIKELIHOOD OF FACILITY INTEGRITY FAILURE?

The Varanus Island and Montara incidents highlighted a number of fundamental issues relating to the regulation of offshore petroleum facilities. The MCI was struck by the substantial divergence of offshore regulatory practices in Australia,<sup>151</sup> which continues to be reflected in the regulation of well activity, as highlighted by safety and environment requirements to reduce risk to ALARP and well activities and operations to be undertaken in accordance with GOP. Furthermore, the MCI concurred with the view of other recent inquiries into offshore petroleum<sup>152</sup> that, at a minimum, the proposal of the Australian Productivity Commission to establish a National Offshore Petroleum Regulator should be pursued.<sup>153</sup> The MCI also concurred with previous reports that well integrity should be moved to NOPSA, since ensuring well integrity is essential for facility safety and integrity.<sup>154</sup>

CONCLUSION

The regulation of well operations and well management by NOPSEMA has provided a much stronger level of vertical regulatory integration of petroleum activities, since well operations and facilities responsible for drilling wells are regulated by the same regulator. However, while well integrity and operations and facility integrity and operations are regulated according to different standards and practice (use of the SCR for facility integrity and GOP for well integrity, as noted in Regulation 5.08(1)(b)), there may be a greater likelihood of a well blowout, causing harm to petroleum facilities and those who work on these facilities.

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<sup>150</sup> *Id.* at 595–96.

<sup>151</sup> BORTHWICK, *supra* note 19, at 17.

<sup>152</sup> *Id.*

<sup>153</sup> *Id.* at 18.

<sup>154</sup> *Id.*



The current offshore petroleum regulatory system in Australia's waters developed in response to the Varanus and Montara incidents has not addressed the fundamental issues identified as a root problem in Australian petroleum regulation, namely, the horizontal and vertical integration of the regulation of petroleum activities. Certainly, the possibility of establishing a single regulator was difficult, given the constitutional arrangement for marine regulation in Australian Waters under the OCS. However, the regulatory framework established in response to the risk of CFIFs has increased the number of bodies that regulate horizontal petroleum activities (i.e., across the various marine jurisdictions). Rather than regulation occurring under the JA/DA and NOPSA arrangement in Commonwealth Waters and state regulators regulating petroleum activities in Coastal and State Waters, there is now a mixed regulatory framework across Australia's marine jurisdiction. In Commonwealth Waters, NOPSEMA and NOPTA regulate petroleum activities in conjunction with the JA. In the Coastal Waters of some states and the NT, the NOPSEMA/NOPTA/JA arrangement regulates some activities, while the states regulate activities in State Waters. In Western Australia, the state regulates all activities in the Coastal Waters and State Waters.

Arguably, the regulatory reform creating a single regulator, undertaken by the Commonwealth in response to the Varanus and Montara CFIFs, has not reduced the likelihood of facility incidents that may cause loss of life or property, since the regulatory reform has established three Commonwealth regulators (NOPSEMA, NOPTA, and the JA), where two regulators previously existed (NOPSA and the JA/DA). In addition, prior to the regulatory reform, the DA regulated day-to-day activities in State, Coastal, and Commonwealth Waters (since the JA/DA arrangement effectively made the DA the *de facto* regulator), and NOPSA regulated safety in Commonwealth Waters, at the very least. Now, State and Coastal Waters are regulated by the State agency (who was also the DA), while Commonwealth Waters are regulated by NOPTA, NOPSEMA, and the JA. This disjuncture means that, under the current framework, the horizontal regulation of petroleum activities is split between multiple bodies—the very scenarios that multiple reports have aimed to minimize.

Whether such regulatory reform has reduced the likelihood of further facility incidents remains to be seen. Given that the NOPSEMA/NOPTA/JA framework has been in force for two years, it is premature to draw conclusions. Instead, it is prudent to observe the operation of the newly implemented regulatory framework in order to determine whether the legislative changes are an appropriate response to reduce the likelihood of facility incidents during Australian offshore petroleum activities.