NOPSEMA

CEO presentation

A302286 20 June 2013

Safety in the Australian Offshore Oil and Gas Industry Post-Piper – A Regulator Reflection

Piper 25 Conference

18 – 20 June 2013
Aberdeen, Scotland

Ladies and Gentlemen

Thank you for allowing me the opportunity to speak to you this morning; I am privileged to speak at such an important event alongside those with such experience and expertise.

I am the Chief Executive of NOPSEMA, an independent statutory authority with the responsibility for regulating the safety, well integrity and environmental management of the offshore oil and gas industry in Australia. As Chief Executive, I report to the Federal Minister for Resources and Energy. I lead a team of 120 people spanning the west and east coasts of Australia, with our headquarters in Perth and a small office also in Melbourne.

I travelled from my home in Perth to be part of this important event for three reasons. To share with you how the governments of Australia and its regulators have learned from experiences in the North Sea and from the Piper Alpha disaster, to explain how we have implemented key recommendations of Lord Cullen's report and to say thank you for the contributions arising from the Piper legacy.

I will also reflect on some of the lessons and themes from a regulator's perspective, with a view to posing some challenges for government, industry and regulators as we move forward to define the offshore petroleum industry as one that is safe for people and the environment in addition to one that brings economic benefit to the communities in which it operates – essentially, an industry we would like our children and future generations to be part of.

Over the last two days much has been spoken about the 1990 report from Lord Cullen which called for widespread changes in the UK industry and also set in motion changes internationally. For regulators and governments in Australia, influential recommendations included:

- The requirement for "goal setting" regulation
- The need for a single regulator to remove confusion and uncertainty about overlapping jurisdiction and potentially conflicting requirements
- The importance of an independent regulator
- The need for a properly resourced inspectorate employing a critical mass of specialist (competent) inspectors

And so we, in Australia, got to work.

Australia and the safety case regime

To put the development of these arrangements in context, first a little background to Australia's legislative structure – we are a Federation with a division of responsibilities amongst the Federal Government and those of the eight states and territories.

In 1979, before Piper Alpha, legislative power and responsibility for offshore petroleum activities was divided at a national and state level. A department, called a Designated Authority, managed regulation and administration in corresponding state/territory jurisdictions. The designated authorities were responsible for petroleum acreage release and permit allocation, offshore activity promotion, sometimes major project facilitation as well as safety, wells and environmental management regulation.

Following the Cullen report, legislation in Australia was amended to introduce the concept of duty of care and clarify key responsibilities fundamental to a modern occupational health and safety regime. Further progress was made in 1996 with legislation to provide a firm legal basis for the safety case for all offshore petroleum facilities.

As a result, by 1996 a goal setting regime and the associated safety case process had been established.

The Australian Government recognised that more might be needed to achieve an effective safety case regime. In 1999, it commissioned a review of offshore safety in Australia to address its concerns over the adequacy of the existing regulatory arrangements.

The review by independent offshore safety experts reported in 2001 and concluded that:

> "…the Australian legal and administrative 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."

It recommended a national petroleum safety regulatory authority.

Moving quickly to reconfirm the priority for improving safety in Australia's offshore petroleum industry, in 2002 Federal, State and Northern Territory ministers accepted the review recommendations by endorsing the "safety case approach" and agreeing to the formation of an independent national offshore safety authority. This was backed by new laws stipulating the duty of operators to manage offshore petroleum safety. Further, the regulatory authority would be funded by cost recovery from the industry it regulated.

With the establishment and commencement of the National Offshore Petroleum Safety Authority (NOPSA) in 2005, Australia had implemented four key recommendations from Lord Cullen's report:

- "goal setting" regulation and with it the need for operators to submit a safety case covering all aspects of operations
- A single regulator for Commonwealth and coastal waters
- An independent regulator
- A properly resourced and skilled inspectorate - funded by industry levies

At this time and in this setting, I must again thank our international counterparts, in particular the UK and Norway who assisted with our establishment by sharing their expertise and experiences in the development of our processes, policies, and procedures. We must also thank industry and regulators in the North Sea, particularly the UK, where many of our specialists developed their knowledge and expertise.

The knowledge, experience and expertise of those now working with us in Australia is a formidable and valuable legacy of Piper Alpha and the Cullen Inquiry.

Today, the authority I head is known as NOPSEMA and is a specialist regulator focussed only on offshore petroleum operations. More recently we have responsibility for regulating offshore **greenhouse gas storage** activities.

Consolidating the safety case regime in Australia

As you can see, within a short space of time there was substantial progress in the structure and implementation of offshore petroleum regulation in Australia. As it turns out, this wasn't enough. Major accidents in Australia and internationally, became the unfortunate catalysts for further change.

On 3 June 2008, a high pressure 12 inch export sales gas pipeline ruptured and exploded on the beach of Varanus Island off the coast of Western Australia. The pipeline had been weakened by a section of external corrosion. Another parallel pipeline ruptured soon after, directing fires towards the onshore processing plant and causing several associated lines to rupture and ignite. Fortunately no one was hurt. In addition to the loss in export revenue, the resulting damage and plant closure reduced Western Australia's gas supply by almost one third for two months. Full production had not been restored more than a year after the incident.

The inquiry into the Varanus Island incident reinforced both the technical requirements for actively implementing plans to manage facility integrity and also highlighted the potential for confusion at the point where different jurisdictions meet. The resulting report illustrated the risks where regulatory responsibilities are not clear or where regulators do not exercise powers consistently and impartially.

Then on 21 August 2009, failure of well integrity barriers of the PTTEP Montara H1 well in the Timor Sea, North of Australia, set in motion a chain of events that eventually led to the Australian offshore petroleum industry's most significant incident in decades. The oil spill and gas leak lasted 74 days until the Montara well and wellbore was successfully capped. Ultimately, on 3 November, a fire destroyed the wellhead platform and West Atlas jack-up drill rig. Remarkably and most fortunately, no one was killed and there were no injuries; had circumstances been only slightly different the results could have been catastrophic.

Then April 2010 saw another loss of well control and major blowout, this time in the Gulf of Mexico, USA. The BP Macondo disaster claimed 11 lives. The media attention quickly turned to the path of the oil spill, environmental damage, impact on communities and livelihoods and the extensive efforts to bring the well under control over the next 87 days.

Once again, the spotlight was focused on the high-hazards of the offshore oil and gas industry providing an impetus for change within the Australian petroleum industry.

Further inquiries into the Montara well head blowout highlighted a number of operator, design and regulatory failures including questions around the resourcing capacity of the Northern Territory Designated Authority to adequately monitor well operations in its jurisdiction, and enforce compliance with important elements.

You may recall the Cullen Inquiry conclusions about the importance of a single, well-resourced, competent regulator with a critical mass of expertise - these conclusions were pertinent to the events that led to these major offshore incidents and instrumental in spurring further reform.

The Montara Commission of Inquiry Report recommended a single, independent regulatory body be responsible for safety as a primary objective, in addition to well integrity and environmental approvals. As a result on 1 January 2012, NOPSA became NOPSEMA - the National Offshore Petroleum Safety and Environmental Management Authority.

With the formation of NOPSEMA, we took a step forwards recognising that the integrity of a well is inextricably linked with the safety of the offshore workforce and, furthermore, that many barriers that prevent harm to people also prevent damage to the environment.

At the same time, however, Australia has taken a step backwards from the vision of a single national independent regulator enabling industry to focus on just one set of requirements. We have a way to go before you can stand on any beach in Australia looking out to sea and know that all petroleum activities where you stand to the edge of the economic exclusion zone are regulated by a single, properly-resourced regulator.

Attributes of NOPSEMA are:

- Similar legislative requirements as the UK for workforce involvement. However, I believe we may have much to learn from your step change program.
- Funded through industry levies giving flexibility in remuneration.
- We are a performance–based regime as advocated by Robens (1970) and recommended by Cullen (1990).
- We apply a consistent, performance-based approach, across all elements of our regulatory responsibilities for health and safety, well integrity and environmental management.

We have some prescriptive elements in our regime. For the control of some risks, prescriptive requirements regarding minimum standards may be appropriate. For example:

- Limitations on exposure to certain hazardous substances
- Limitations on exposure to noise
- Oil content of produced formation water discharged to the environment

Our focus has been on major accident events - events involving multiple fatalities or major environmental consequences. These events are consequence-based, regardless of likelihood. We must be vigilant and rigorous in our delivery and regulation. We must plan for what *might* happen should all prevention barriers fail. The starting point is the key regulatory document that defines how this will be done - the safety case, well operations management plan or environment plan.

Our focus on safety has remained through all of the regulatory evolutions. From my experience, one of the ongoing challenges for those with a health, safety and environmental management role in industry is how to strike the right balance in resource allocation between often acute and immediate issues around safety and chronic and often long term issues around environment.

I believe a focus on prevention of major accident events reduces this tension. There is a strong link between safety and environmental outcomes, as recognised in the establishment of NOPSEMA as a single national regulator. Many of the actions and controls necessary to ensure the safety of people (like blowout prevention for example) are equally effective at protecting the environment.

If we look at the media reports of the Macondo blowout - 11 men died and others were injured. While their deaths were reported early on, the majority of the images and the enduring story in the media was the environmental impact. The Macondo experience demonstrates the value of planning, designing and delivering risk management that considers the impact on both lives and the environment. This does not, of course, cancel out the need to take seriously those aspects of operational planning that exist *primarily* to protect the environment.

These are some lessons of Piper Alpha and the significant contribution they've given to Australia's offshore regulatory regime, I would be grateful for your indulgence as I now share with you some of the challenges I see ahead for regulators and industry.

As a regulator, I ask myself:

Are we effective? Have we made a difference? How do we know?

If we **are** effective, what aspects of the regime are the most crucial? Is it:

- "Goal setting" regulation and with it the need for operators to submit a safety case covering all aspects of operations?

- A single regulator?
- An independent regulator?
- A properly resourced inspectorate employing a critical mass of specialist (competent) inspectors?

Are these characteristics interconnected?

As Andrew Hopkins and Sir Haddon-Cave highlighted, governments cannot pick and choose aspects they like, ignore or marginalise others and expect to deliver a consistent outcome. Independence, well resourced, competent, a single regulator with a clear mandate are all essential for a performance-based regime to work.

Whilst I believe that the insights on regulation from Lord Cullen's report are as relevant for regulators today as they were 25 years ago, I am still troubled: Is there something that we are missing? What more should we consider? What will leading-edge regulation and regulators of the offshore oil and gas industry need to do their job effectively in 25 years' time?

Inextricably linked to these quandaries is the question: Exactly what is it that we regulators do that contributes the most to the reduction of risk and the creation by industry of safe places to work? If we can answer this, we can then apply our resources where it will have the most impact.

- Is it when the regulator challenges industry during assessment – when we ask whether you in industry "Are you doing enough to manage risks to as low as reasonably practicable?"
- Is it when the regulator follows up during inspections when we ask you in industry to provide evidence that you are in fact meeting your own commitments and doing what you said you would do? For NOPSEMA this is a lot more than simple check lists as to whether equipment is present or whether certain tests are undertaken - we strive to probe whether industry systems and processes are present and functioning as intended.
- Is it when the regulator investigates when things go wrong and carries out enforcement actions?
- Or is it our stakeholder engagement, such as the promotion of safety and risk management, the sharing of lessons learned and… sometimes… ideally very rarely… spending time educating industry on the basics of risk management?
- Or perhaps… as one of NOPSEMA's very experienced inspectors, said to me last week that "the most important thing that we do is to be there". Whilst I agree

with him in part, I think it is more than 'being there' that makes a difference. It is also about asking questions and actually having the knowledge and skills to know the most pertinent challenging questions to ask, to understand the answer and to take action if the answer is insufficient or unsatisfactory.

This brings me to one of the key challenges faced by NOPSEMA and many, if not all, regulators of the offshore industry and, I respectfully suggest, much of industry itself. And it takes us back to one of the key recommendations of Lord Cullen – resourcing and skill.

The price of capability

At NOPSEMA, we believe that is essential for inspectors to understand industry in order to be able to effectively regulate. Our approach to regulation relies on recruiting, developing and engaging sufficient capable inspectors to deal with the diversity and complexity of Australian industry - Miranda Taylor from APPEA will talk more about the Australian offshore industry shortly.

Securing a team of skilled professionals to deliver NOPSEMA's core regulatory functions involves a sophisticated strategy that combines attractive remuneration and conditions and seeks to navigate the complexities and confines of workforce dynamics and demographics.

Can the regulator be outsourced - there has been much weight given to the concept of "independent well examination." In my view this simply shifts the challenge of capability somewhere else and adds the complexity of independence if the well examiners are trying to build a sustainable business. (Remember the golden rule - he who has the gold makes the rules.)

Are we prepared to pay the costs involved today in resourcing a competent expert regulator? Or would society prefer to wait and pay the price of failure?

What is certain is that in the longer term, if regulators are unable to recruit or otherwise obtain the expertise they need to be effective, there will be significant consequences:

- Loss of respect from those we regulate and government and communities, making it harder to recruit good people and obtain resources, leading to a cycle of further erosion of respect and the ultimate demise/restructure/replacement of the regulator.

- Challenge to a performance-based model to a more rules based, prescriptive approach more amenable to check lists and the check box approach which involves less thinking and judgment on the part of the regulator.

The value of independence

NOPSEMA views its independence as critical to regulatory decision-making. We make decisions in accordance with the legislation, which informs NOPSEMA's policies and can evolve in response to the experiences and performance of industry. We would become uncomfortable if we were asked to take into account extraneous factors or, in the case of assessments, prompted to imagine what an operator planned to do in a particular circumstance. We look for evidence.

The challenge is not to allow stakeholder engagement activities distract us from our core functions or divert limited resources to 'keeping others happy', rather than 'keeping our eye on the ball.' To address this, regulators and their governments should work to progress:

- Regulations based on good science
- Regulatory effort coordinated via international initiatives – work of IRF
- The development of international standards
- Cooperation with industry to help promote good governance and evidence-based decision making
- Good communication and transparency
- Work with stakeholders to apply prescription and performance based approaches most effectively
- Equitable enforcement within and across jurisdictions
- Timely decisions based on the requirements of the law following due process

Having spent some time focusing on the regulator, it's time now to swing the spotlight on to industry performance and my views on the degree to which Piper Alpha has imbued offshore petroleum organisations with a clear appreciation of the lessons of that terrible event 25 years ago.

Unfortunately, while I acknowledge there has been significant progress in understanding risk and taking steps to manage risks posed by the offshore oil and gas industry, I remain uneasy that some of NOPSEMA's encounters with industry betray an approach to the contrary - a focus is on "the document" and "getting it through" NOPSEMA rather than an unrelenting, systematic focus on reducing risk to their workforce and the environment to prevent major offshore events.

Much work remains for industry and regulators alike. Industry around the world continues to experience incidents which cause loss of life, damage to the environment and loss of trust by governments and communities.

We continue to see catastrophic failures following similar patterns.

Accidents continue to occur as we in Australia experienced in August last year – two men lost their lives on the drill floor of the Stena Clyde and only last Friday a tragic accident in the Dutch sector North Sea left two workers dead and one seriously injured.

So, while industry may have changed and some elements may have improved since Piper Alpha, some things have not changed, or not changed enough. To give some examples:

- No comprehensive international incident data base existed then; none exists now
- No comprehensive international database for safety alerts existed then; none exists now
- Standards development was disjointed then and remains so today. Is that what we want?

I could go on, regardless, our view is that there are some clear priorities for further effort by industry which are in the control of individual companies. This is our opinion based on recent inspection findings, incident and accident data and extensive discussion among our inspectors and regulatory specialists.

Technical controls - how do you know as managers and senior managers that technical controls are in-place and functioning as intended? For example:

- What steps have you taken to verify that your company's well barrier policy is in place and actually applied?
- Do you have emergency plans, including oil spill contingency plans that you intend to implement?

Do not wait for your regulator to inspect – make sure your own systems, particularly your audits are effective and can pick up deficiencies and defects.

Management of Change - is often cited as a contributing factor in investigations. Major change seems to be managed better than small incremental changes. What is the situational awareness of your teams to incremental change?

Standards - as a regulator in a performance-based regime standards are critical particularly acceptance standards for risk, especially safety risk. Clear standards are needed for environmental performance.

Asset Integrity - like the North Sea, Australia has aging facilities and it is important that integrity is monitored and managed so they are fit for the intended function. We would like to see much greater emphasis placed on the ability to monitor and manage integrity from the design phase. It is simply not acceptable to claim that an asset has integrity because there has not been a problem if no one has looked to see whether the asset still has integrity.

In closing, the Piper Alpha disaster and inquiry and recommendations by Lord Cullen have had a huge impact. No company or regulator that I am aware of has disputed the messages; some, like Australia, have embraced the recommendations and to date, had success implementing improvements. Regrettably, others have still not bought in.

An entrenched industry and regulatory culture is very difficult to change even when faced by clear evidence of the need to improve the human and organisational aspects of their safety programs. There is resistance to change even when there is a clear opportunity to refocus regulatory programs to emphasise the role of human, organisational and management influences on offshore safety. (For example, the US had started moving toward a goal-setting approach in the 1980's and after Piper Alpha steps were taken toward a safety management regime, but could never overcome the internal and industry resistance.)

Essential to progress is the recognition that responsibility for safety in offshore petroleum operations rests with the operators. Regulators cannot inspect safety into the operations; it must be integral to way the industry does business.

Unfortunately, absent major accidents such as Piper Alpha, and more recently Montara and Macondo, there is little appetite for improvement and the change it entails. However, I believe since Macondo there has been a step change which gives me cause for optimism.

Around the globe companies, even the very largest are realising that they cannot do this alone as they realise they will be judged by the performance of the weakest player. Should things go wrong the entire industries ability to access areas to

explore and develop, favorable fiscal regimes, ongoing support from governments and communities and most importantly the industry's ability to access the best and brightest people will be severely limited.

The level of the communication, collaboration and sharing that we have seen since Macondo has been unprecedented.

We must recognise that what we have in common is much greater than our differences. It is a global industry with mobile equipment and a global workforce. We must minimise local nuances, use common language, frameworks, and approaches. We must continue to seek common understanding of key concepts. Wherever possible we should use what works well elsewhere and avoid growing our own or reinventing the wheel.

Communication, cooperation and sharing applies equally to regulators as well as industry. The International Regulators Forum, the IRF, will be holding a conference in Perth in October to share insights, learning and best practice with ourselves and industry. We will also hold our AGM where we will discuss priorities for the future.

While there is general public acceptance that activities associated with the offshore petroleum industry carry inherent risks, there is also the reasonable expectation that these risks are effectively managed. Events surrounding Piper Alpha and more recent events such as the Montara and Macondo incidents have raised public expectations of industry and government accountability and intensified the level of scrutiny applied to the industry and its regulation.

Without effective risk management systems by industry supported by strong regulatory scrutiny, Piper Alpha could absolutely happen again.

I encourage those leading the offshore petroleum industry into the next generation, to move major accident prevention up the list of priorities, so that safety and environmental management are treated with the same degree of seriousness as profit and loss.

Thank you