

Efficient ways to build oil pollution preparedness and response capability

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Slide 1- Introduction

During this presentation I aim to give you my perspective as a regulator with an Australian context about efficient ways to build oil pollution preparedness and response capability.

Efficiency can be described as the extent to which time, effort or cost is well used for an intended purpose.

There is lots of ways industry and the regulator could each be more efficient. As industry you could reduce costs by sharing more than your tier three response resources – things like ideas, information and successes. You could even merge those same resources to expend less effort and simplify response arrangements. You could move resources closer to your activities and reduce delivery times.

As a regulator we could provide templates for approvals to speed up assessments, we could focus resources on compliance activities, or we could become the Regulator in State and Commonwealth waters reducing the cost on industry and simplifying regulatory arrangements.

Each of these ideas will drive efficiency. Each of them will reduce time, effort and cost. Each of them has merits and limitations. And each of them may be hard to achieve. Each of these ideas is also finite. They have start and finish points. And clear winners and losers. As finite initiatives they may drive efficiency but they are only part of building oil pollution preparedness and response capability. Building capability over the long-term requires a different frame. One that is infinite: a frame where we can build a sustainable solution to maintaining focus on improving our capabilities.

This has long been a challenge in the oil pollution game. Making improvements in the aftermath of major spills is easy. Sustaining progress as memories fade, expertise is lost and prevention proves itself successful is hard work. I believe we're at a critical juncture in the evolution of preparedness and response. One where we have a choice: and if we make the wrong choice we'll find ourselves in the dangerously automated world of business-as-usual. Where inefficiency goes unchallenged and agile business approaches blur our vision of what we're trying to achieve.

So let's reframe the problem. How do we sustain progress in building oil pollution preparedness and response capability?

Slide 2 - Let's reframe - Reframing: Goals, Rules and Feedback

I'm going to use a simple model to frame this presentation. To give the model some context let me take you through an example. In a game of chess the goal is to check-mate your opponents King. The rules are that you have an 8 by 8 board and pieces that have limited moving patterns. The feedback throughout the game is from the strategies you plot to win and the outcome is that you win or lose, thus hopefully meeting your goal.

Now for some context starting in 2009: In terms of oil spill preparedness and response our goal was not to have an accident. The rules were that you must have an OSCP and the feedback we got was that we haven't had an accident. The outcome was Macondo and Montara, and when we looked back on our goal there was an urgent need to change.



And change we have. Our 2014 goal is to “be ready when we have an accident”. The rules also changed and industry is now required to implement controls that mitigate possible consequences. The feedback we’re getting is that we are ready. So what about the outcome? And here we arrive at a critical juncture. We could reflect and pat ourselves on the back and say we met our goal. But then some smartarse MBA graduate will ask us why we invested so much in being ready for something that we’re pretty good at preventing. Before we know it the outcome is once more to change the goal – back to not having an accident.

What if we were to reflect differently on the goal with a view towards sustaining progress? What if we challenged ourselves to do better? Well with this open, honest and positive mindset we’d all think about things we could have done better over the last five years. We would create a list of nice to haves, targets and blockers we have to remove. Now we’re ready to judge the quality of our current goal which was “to be ready when we have an accident”.

We’ve already got feedback that we’ve met the goal and simultaneously we’ve generated a list of things we could have done better. Any future goal can’t be too specific and it can’t be too vague. It can’t be incongruent to our purpose of sustainable progress and industry and the Regulator have got to agree to it. It also should be simple and compelling.

As a start we’re going to work with “be better prepared”.

Slide 3 - Establish the benchmark

So having set the goal to be better prepared we need to be sure about just how prepared we are now. Let me give you some regulatory insight. My team and I have seen over 300 environment plans and contingency plans in the last three years. The three essential elements of risk management on the slide are critical to understanding ones level of preparedness and yet Standards appear sporadically and are often misused, control measures are poorly defined in varying degrees of detail, and performance standards are often ambiguous and undeliverable.

So looking at these three elements there need to better define them in an oil spill preparedness and response context and understand the background, issues and opportunities in each area.

Standards such as Codes, ISO or ASNZ Standards, or API Standards need to be identified in application to oil pollution preparedness and response. The reality is that there aren’t many that don’t focus on prevention. Globally and in Australia industry has been working hard in this space but in comparison to safety of offshore installations this field is still embryonic. Standards also have limitations in that they are not a one-size-fits all and can be misapplied – take for example MARPOL in respect of produced formation water. There are huge opportunities for industry in this space to set standard practice in particular situations which could lead to major efficiencies.

Control measures are the things that actually reduce risk. Control measures can be reflected at varying degrees of detail making them hard to define. Take for example the concept of identifying the contingency plan as the only mitigation control measure. This oversimplification would necessitate that each response strategy, procedure, checklist, person and item of equipment be covered in one control giving little to no feedback on the level of preparedness of a duty holder. Better then is to understand the criticality of controls in terms of the risk reduction they achieve and define those in greater detail. If done well once there is applicability across industry for this work.

Performance standards state the performance of a control measure and will state the effectiveness of that control measure in terms of its functionality, availability, reliability, survivability, independence and compatibility. Common issues with performance standards are;

- that the flexibility provided by this approach allows woolly commitments;

- that as a result of poorly defining the control measures the performance standards become onerous;
- that vague and unstructured performance standards lack the specificity to satisfy the Regulator

Deciding which performance metrics need to be measured to show risk reduction achieved will support benchmarking and provide the basis for being better prepared.

So now we've got to evaluate the quality of our rules. Currently the rules are to implement controls that mitigate possible consequences. This rule doesn't shape dynamics congruent to our new goal so we have to amend the rules. The rules have to clarify constraints and shouldn't be obstructive. For the purposes of this presentation let's try to simply characterise the rules. Let's say the new rule is that industry is "challenged to do better" (within the bounds of what is reasonably practical).

Slide 4 – Show progress

So with a new goal and a benchmark for where we're at we've got to show we are making progress towards our goal, within the rules. Showing the regulator that you are continually reducing risks to as low as reasonably practicable is how this can be achieved. Here industry has opportunities to document practices into Standards so that all might benefit. In this slide you can see two methodologies in relation to oil pollution preparedness and response that complement more traditional approaches such as cost-benefit or factor analysis.

An improved effectiveness methodology is based on the effectiveness of control measures. The method works by challenging defined response needs to see whether we could reduce the incident duration, increase our readiness, have more effective practices, be better trained etc. Taking a response need for immediate deployment of containment and recovery of oil at sea as an example we could show that deployment in 6 hours is better than deployment in 24 hours. Shown in terms of percent increased effectiveness each control measures could be seen to contribute something to a better response.

A mass balance methodology is based on historical comparison of control measures success in previous spills. For example when planning a response one could assert that containment and recovery by four 'J' configured boom systems is going to capture x% of the spill volume so then the other response strategies need to address the remaining y% of oil remaining at sea.

The specifics of these two methodologies are not required for us to understand that once we've got an approach by which we can show progress over time, we will be able to generate some meaningful feedback with which to evaluate our goal. This feedback could be characterised as being able to show that "we're better than we used to be".

But feedback this generalised may not help us. So how do we generate more meaningful feedback on performance so that we can evaluate our goal?

Slide 5-7 - Gather meaningful feedback

We have actually already started this part. Let me give you an example using the risk bowtie model. In 2009 most plans, including those for the Macondo and Montara activities, used only one mitigation control identified as the OSCP and reasoned the consequence to be "an oil spill." The other important thing to note is that on the prevention side we have a good spread of control measures, of different types and multiple identified hazards.

Fast forward to 2014 and we're developing our appreciation for the right hand side of the bowtie. We still have the contingency plan in place but we have added some specific technical control measures to mitigate consequence. We have also started to better define our consequences to reflect the range of variables in a risk assessment. This is progress and there is more we can do. The more observant among you would have noticed that we haven't yet got system level control measures on the right hand side.



Where could we be in 2019? Well we can better characterise the consequences we need to prepare for and therefore put in place better control measures. I believe these control measures are already in place and they are key to reducing risk but they are engrained in duty holder practices and don't get the recognition they deserve. In addition the industry has sophisticated system level controls that contribute to preventing events from occurring. These mature, tested and proven systems have equal applicability to mitigation. In the submissions we get common control measures are sporadically applied and where they are leveraged it's usually through thoughtless duplication rather than critical analysis.

Learning from safety risk management has got to be the highest priority for environmental professionals. Most Standards for safety performance started 20 years ago in the North Sea. These standards have matured and lessons learnt from incidents has fuelled there progress. Yes the context is different, and yes safety only has a one receptor species but the principles are exactly the same.

The quality of industry's prevention has at its core a clear benchmark of performance, a deep understanding of the rules by which it must operate, and a wealth of rich feedback with to correct varying performance quickly. In the world of risk mitigation there is no direct comparison to the amount of information available for prevention. The good news is we're not starting from scratch and the blueprint for success is easily with our reach.

So now we know how to establish a benchmark against which we can be measured and move towards an agreed goal. And we know how to show progress within a set of rules. We also know we're on the right track to gathering meaningful feedback about our performance and we're performing better than we were.

So what's the outcome we're going to get?

Slide 8-9 – What's the outcome and where are we going?

Going back to the original model proposed we can evaluate our goal in the context of the feedback we sought. We can see that we'll be able to show we are better prepared than we were and so we have met our goal to "be better prepared." But our goal isn't quite satisfied because there might be more we can do to.

So the outcome we've created is infinite, not finite. We have built a model of continuous improvement. In addition we've made the model sustainable because the rules of the model require us only to implement what is practical and reasonable. There is an independence from prevention, and a reliance on it, that will support efficiency.

So let's go back to the choice we have to make now.

As I said earlier we could reflect on our current performance, pat ourselves on the back and say we met our goal "to be ready." But we know this goal doesn't promote us to find efficient ways to continuously build our oil pollution preparedness and response capability. We've got the change the goal and set a benchmark for performance. The rules need to shape dynamics that are congruent to the goal and help us show progress. And we've got to generate feedback that allows us to interrogate performance and reflect honestly on how we've done.

If we instead ask ourselves why we've put so much effort into improving preparedness and response capability we're might end up taking backwards steps and becoming complacent. Changing our goal is risky because if we're not careful our goal will revert to not having an accident.

This model is proposed so that as the offshore petroleum sector we can maintain our focus on improving preparedness and response. At its source we need a new goal; to be better prepared. Only then can we start to build our oil pollution preparedness and response capability in a sustainable way.

Slide 10 – Thank you