How much is enough?

Regulating Preparedness for Oil Spill Response in the Offshore Petroleum Industry

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<table>
<thead>
<tr>
<th>How many?</th>
<th>How much?</th>
<th>What level of?</th>
</tr>
</thead>
<tbody>
<tr>
<td>dispersant aircraft</td>
<td>boom</td>
<td>pre-spill contractual arrangements with 3rd party providers</td>
</tr>
<tr>
<td>recovery skimmers</td>
<td>Dispersant stock</td>
<td></td>
</tr>
<tr>
<td>bird cleaning kits</td>
<td>waste capacity?</td>
<td></td>
</tr>
<tr>
<td>beach masters</td>
<td>...</td>
<td>training</td>
</tr>
<tr>
<td>Monitoring vessels</td>
<td></td>
<td>Detail in plans...</td>
</tr>
<tr>
<td>...</td>
<td></td>
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</tbody>
</table>

And *by when (?)* and *for how long (?)*
"How much is enough?" in three parts

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) How much preparedness is needed for a particular offshore activity?</td>
<td>...depends on the situation</td>
</tr>
<tr>
<td>2) Who is responsible to figure it out?</td>
<td>...depends on the regime</td>
</tr>
<tr>
<td>3) How does (any)one figure it out?</td>
<td>...let’s have a look</td>
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</table>
Context - Offshore Oil Spills/ Australia

- Drilling rigs, platforms, FPSOs, wells, subsea install
- Generally:
  - Known locations/oils/climate
  - Advance planning/protection priorities
  - Operators with strong local presence
- Possibility of:
  - Very large spill quantities
  - Long spill durations
  - Subsea release
  - Heavy crude - condensates

Australia
- High public expectations on safety and environment
- Large part of petroleum activities located in remote areas
Context - NOPSEMA and Objectives-Based Regulation

- NOPSEMA: Commonwealth offshore regulator
- Environment Regulations/ OPGGSA (1999) establish objectives-based regulation:
  - Non-prescriptive approach
  - Preparedness and response lie with titleholder
  - Risk-based preparedness
  - Accepted plans must be in place before activity begins
  - Regulator assesses & inspects
- Similar approaches: NZ, UK, BR, CA, MX, NO.
Other Regulatory Approaches

**Maritime model**

- Government-led/ polluter-pays response
- Preparedness not linked to specific activity

*Examples: AMSA (Aus), MNZ (NZ), CCG (CA), RWS (NL)*

**Prescriptive/ Standards-based model**

- Industry-led response
- Government sets specific technical standards for industry preparedness and response

*Examples: USA, Australia prior to 1999*
Observed Approaches

Which would you choose?

a) Establish a post-incident planning cycle

b) Rely on inventory of own/ 3rd party stockpiles

c) Trust expert opinion

d) Study need and tailor capability to match, ensuring ALARP

e) All of the above

*Necessary but not always sufficient*

*Caveat – Nature and Scale*

ALARP = as low as reasonably possible
1. Run a risk assessment
   • *Determine need* → *Tell responders what they are facing*

2. Plan the response
   • *Establish capability* → *what is required/ where you’ll get it*

3. Ensure *ALARP*
   • *Is there any more you can/ should do?*

⇒ *Figure all that out and you’ll know how much is enough*
### Describing Need and Capability

<table>
<thead>
<tr>
<th><strong>Need</strong></th>
<th><strong>Capability</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Water depth</td>
<td>• rigs relevant for water/well depths...</td>
</tr>
<tr>
<td>• flow rate/ duration</td>
<td>• SSDI systems</td>
</tr>
<tr>
<td>• oil characteristics/ weathering</td>
<td>• support vessels/ resources</td>
</tr>
<tr>
<td>• water currents/ temperature</td>
<td>• dispersant stock</td>
</tr>
<tr>
<td>• slick volumes/ areas over time</td>
<td>• aerial observation</td>
</tr>
<tr>
<td>• sea state/ weather</td>
<td>• aerial/ vessel spray systems</td>
</tr>
<tr>
<td>• threats posed (shoreline stranding)</td>
<td>• dispersant stock</td>
</tr>
<tr>
<td>• number/ size/ characteristics of priority areas for protection</td>
<td>• monitoring systems...</td>
</tr>
<tr>
<td></td>
<td>• number/ type of response teams and resources for P&amp;D, for shoreline clean-</td>
</tr>
<tr>
<td></td>
<td>up, oiled wildlife response...</td>
</tr>
</tbody>
</table>
### Need

Dispersant injection/ support systems (incl. dispersant) to deal with specific situation:
- *water depth/wellhead arrangement*
- *flow rate/duration*
- *oil characteristics/weathering*
- *water currents/temperature*

### Capability

- Access to expertise/SSDI system(s)
- Support (ROVs, dispersant stock...)

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**Kit/expertise**

**Dispersant supply**

**Regional contract A**

**Regional contract B**

**Regional stocks**

**Own**

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Ability to inject XX m³ dispersant over Y days

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Courtesy of AMSA
DWH (2010), Courtesy of National Geographic
Thank you