Improving Industry Performance in the Offshore Petroleum Regime

Jane Cutler, Chief Executive Officer

OGP Safety Committee
6 September 2012
What I will cover

- NOPSEMA and legislation
- Industry performance
  - Accidents + Dangerous occurrences
  - Process safety survey
  - Inspection findings
<table>
<thead>
<tr>
<th>Monitor &amp; Enforce</th>
<th>Investigate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote</td>
<td>Advise</td>
</tr>
<tr>
<td>Co-operate</td>
<td>Report</td>
</tr>
</tbody>
</table>

**Functions**

- Compliance
- Improvement
- Governance
NOPSEMA’s coverage

Operations

– Offshore petroleum operations
– Offshore greenhouse gas storage operations

Scope

– Occupational health and safety
– Structural integrity of facilities and wells
– Environmental management of petroleum activities
1. OPGGSA

PETROLEUM ACTS

2. WA - Petroleum Submerged Lands Act 1982
3. WA - Petroleum & Geothermal Energy Resources Act 1967
4. WA - Petroleum Act 1936
## NOPSEMA regime

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Functions</th>
<th>Safety</th>
<th>Wells</th>
<th>General Administration</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>People at facilities</td>
<td>Well integrity</td>
<td>Petroleum exploration and recovery</td>
<td>Petroleum activity</td>
<td></td>
</tr>
<tr>
<td>Dutyholder</td>
<td>Operator of a facility</td>
<td>Titleholder</td>
<td>Titleholder</td>
<td>Operator of a petroleum activity</td>
<td></td>
</tr>
<tr>
<td>Permissioning document</td>
<td>Safety Case</td>
<td>WOMP</td>
<td>Titles + conditions</td>
<td>Environment Plan</td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>OHS inspectors</td>
<td>OHS inspectors</td>
<td>Petroleum Project Inspectors</td>
<td>Petroleum Project Inspectors</td>
<td></td>
</tr>
<tr>
<td>Powers</td>
<td>OHS related entry, seizure, Notices</td>
<td>OHS related entry, seizure, Notices</td>
<td>Entry &amp; information</td>
<td>Entry &amp; information</td>
<td></td>
</tr>
<tr>
<td>Money</td>
<td>Safety Levy</td>
<td>Well Levy</td>
<td>Reimbursement from NOPTA</td>
<td>Environment Levy</td>
<td></td>
</tr>
</tbody>
</table>
2011 Activities

**INDUSTRY**
- 35 Operators
- 209 Facilities

- 447 Assessments submitted
- 340 Incidents Notified

**NOPSEMA**
- 48.2 FTE Regulatory Staff
- 23.3 FTE Support staff

- 382 Assessments Notified
- 157 Facilities Inspections
- 0 Major Investigations
- 11 Minor Investigations
- 329 Incident reviews
- 100 Enforcement actions
Facilities

<table>
<thead>
<tr>
<th>Facility Group</th>
<th>Based on Current (2011) data *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms</td>
<td>58</td>
</tr>
<tr>
<td>FPSOs</td>
<td>14</td>
</tr>
<tr>
<td>MODUs</td>
<td>15</td>
</tr>
<tr>
<td>Vessels</td>
<td>13</td>
</tr>
<tr>
<td>Pipelines</td>
<td>109</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>209</strong></td>
</tr>
</tbody>
</table>

* Numbers fluctuate slightly as facilities enter and leave the regime e.g. mobile facilities and inactive facilities
Annual TRC (Total Injuries) Rate
per million hours

TRC = LTI + ADI + MTI
Actual harm

#1 = Vessel Operator
#2 = MODU Operator
#3 = Platform Operator
#24 = Platforms Operator

Variation amongst operators
Potential large-scale harm

Hydrocarbon Release Rates
per 100 Production /Drilling Facilities per month

- Total HC Gas Releases
- Total HC Liquid Releases
>35% of all incidents occur on FPSOs

>25% of all incidents occur on Platforms
Incidents per facility

Incidents per Facility per year
By Facility Type
2011

NB: Incidents includes Accidents and Dangerous Occurrences
Safety Critical Elements

Control measures relied on to reduce the risk of one or more MAEs to ALARP

![Graph showing damage to safety-critical equipment rates per million hours from 2005 to 2011. The rates increase from 2005 to 2008, peak in 2008, decrease in 2009, and then increase again from 2010 to 2011.](graph.png)
• AIChe, CCPS (2008): Ensure Safety Critical Equipment is functional:
SCE inspections completed/Total SCE inspections due
International Comparison

**Gas Release Rates**
(per 100 million BOE)

Conservative estimate based on stable BOE 2010-11

**Injury Rates (ADI+LTI)**
(per million hours)

Rate

2005  2006  2007  2008  2009  2010  2011

Australia

IRF Countries
## Incident Root Causes

### 2011

<table>
<thead>
<tr>
<th>ALL OPERATORS</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED - DESIGN - Design specs</td>
<td>12%</td>
</tr>
<tr>
<td>ED - PREVENTIVE MAINTENANCE</td>
<td>10%</td>
</tr>
<tr>
<td>ED - EQUIPMENT / PARTS DEFECT</td>
<td>8%</td>
</tr>
<tr>
<td>HPD - PROCEDURES</td>
<td>7%</td>
</tr>
<tr>
<td>ED - TOLERABLE FAILURE</td>
<td>3%</td>
</tr>
</tbody>
</table>
## Opportunities for improvement

<table>
<thead>
<tr>
<th>Safety Culture Survey TOPIC AREA</th>
<th>Areas of concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Values / Commitment</td>
<td>Pressure to work overtime - loyalty to their own work unit</td>
</tr>
<tr>
<td></td>
<td>Process safety programmes don't have adequate funding</td>
</tr>
<tr>
<td>Reporting</td>
<td>Hazard identification, control and reporting training not adequate</td>
</tr>
<tr>
<td>Training</td>
<td>Contractors don't receive adequate training to do their job safely</td>
</tr>
<tr>
<td>Worker Professionalism / Empowerment</td>
<td>Workers don't actively participate in incident investigations</td>
</tr>
</tbody>
</table>
Topic-based Inspections

- Maintenance Management
- Ageing Facilities
- Emergency Management
- Contractor Management
• Variation between documented maintenance system and how maintenance is actually conducted
• Formal deferrals process not used – risks not assessed
• Temporary repairs risk assessment - poor
• 3rd party competency – EHS assessed but not technical competencies
• Maintenance supervisors workload
• Remote technical support
• Auditing – inadequate
• Some current integrity management systems take ageing into account
• Little evidence of systematic approach to systems (process, blowdown, electrical) other than structural
• Corrosion management – variable to poor
• Critical function tests (CFTs) – not conducted to equipment manual or overdue
• Classification for floating facilities – reliance on Class may not be sufficient to demonstrate ALARP
Drills being undertaken but do not cover all emergency controls
PA systems ineffective
Emergency escape routes not clearly marked or obstructed
Response times – not subject to performance standards and not tested
Inadequate debriefs
Auditing - inadequate
• Variable level of supervision

• Contractors often considered as part of core workforce and given important emergency roles, however, not subject to the same level of training or supervision

• Lack of procedures for management of contractor OHS
Thank you