Deferred Maintenance

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Deferred maintenance – a problem?

“If I had an hour to solve a problem I’d spend 55 minutes thinking about the problem and 5 minutes thinking about the solution” - Albert Einstein
Framing the Problem

- Introduction
- Global industry – behaviour drivers
- Australia industry
- Maintenance indicators
- Recent events
- The “Effective Operator”?
- Establishing better practices
- Wrap-up & questions
Global industry – behaviour drivers

Shell to cut up to 9,000 jobs as oil demand slumps

Royal Dutch Shell has said it plans to cut 7,000 to 9,000 jobs as it responds to challenges including the slump in oil demand amid the Covid-19 pandemic.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2020
Building LNG export capacity

Liquefied natural gas exports from selected countries (Jan 2013-May 2019)
billion cubic feet per day

Qatar
Australia

United States
Malaysia
Russia
Offshore facilities – all need maintenance
Australia - offshore hours

Total offshore hours worked

27%

Unique event – or start of a trend?
## Asset integrity – root causes?

<table>
<thead>
<tr>
<th>Asset</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disused subsea infrastructure</td>
<td>Sub-sea equipment failures</td>
</tr>
<tr>
<td>Drilling rig</td>
<td>Equipment integrity failure</td>
</tr>
<tr>
<td>Production platform</td>
<td>Inlet separator crack defect</td>
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<tr>
<td>Production platform</td>
<td>Crane defects</td>
</tr>
<tr>
<td>FPSO</td>
<td>Corrosion management</td>
</tr>
<tr>
<td>FPSO</td>
<td>Isolation design defects</td>
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<tr>
<td>FPSO</td>
<td>Shut-down valve defects</td>
</tr>
<tr>
<td>Drilling rig</td>
<td>Riser installation failure</td>
</tr>
<tr>
<td>Production platform</td>
<td>Offtake hose operational failure</td>
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</tbody>
</table>
The ‘Effective Operator’?

- The ‘Effective Operator’ uses maintenance deferral to ...
  - Respond to inevitable, but unplanned events (e.g. COVID pandemic)
  - Manage and mitigate risk
  - Prioritise activities (e.g. safety critical equipment)
  - Identify trends and respond proactively
  - Allocate resources effectively to reduce risk (e.g. human, material)

- However, maintenance deferral is not a tool to ...
  - Justify modifications to performance standards
  - Reduce safety critical assurance activities
  - Re-categorise equipment as non-safety critical
Seeking “better practices”

- Industry survey April 2021
- Qualitative review
- Inevitable differences in approach & risks
- Aiming to identify better practices
- The “effective operator”
- Engage industry
- Targeted inspections

Work in progress....