KP4: AGEING & LIFE EXTENSION (ALE) INSPECTION PROGRAMME 1 YEAR ON
PRESENTATION OUTLINE

- What is KP4?
- What have we achieved so far?
- Supporting activities; external events, web page, network and technical development
- Inspection programme and plan
- What have we found?
- What next for KP4!
IMAGINE

- IMAGINE!
- No breakdowns
- No hydrocarbon releases
- No ORAs
- No regulator or Oil and Gas UK
WHAT IS AGEING?

Evidence of degradation and damage
OR

Insufficient knowledge / information to know the extent of possible deterioration

Need to consider effects of:
- accumulating or accelerating damage
- modifications
- obsolescence
- changes of process & / or well conditions
- advances in knowledge and technology
- organisational issues / loss of corporate knowledge
AGEING AND LIFE EXTENSION - NEED FOR FORWARD PLANNING

Scheduled Actions

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>COST</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Passive Fire Protection Upgrade</td>
<td>£5,000,000</td>
<td>2012</td>
</tr>
<tr>
<td>2</td>
<td>Deluge Modification</td>
<td>£3,000,000</td>
<td>2014</td>
</tr>
<tr>
<td>3</td>
<td>Fire and Gas System Replacement</td>
<td>£10,000,000</td>
<td>2022</td>
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AIM

To ensure that the risks to asset integrity associated with ageing and life extension are controlled effectively

OBJECTIVES

- To raise awareness of the need for specific consideration of ageing & life extension issues
- To inspect individual duty holder approaches to the management of ageing and life extension
- To identify shortcomings and enforce an appropriate programme of remedial action (e.g. revision of the safety case);
- To develop a common industry approach to the management of ageing installations to ensure the safe operation of all offshore installations on the UKCS
PROGRESS SO FAR

- Launched KP4 on 28 July 2010
- Developed the programme, initial plan and programme review team
- Raised awareness in the industry
- Developed policy and strategy documents
- Developed inspection templates
- Created an Ageing webpage [http://www.hse.gov.uk/offshore/ageing.htm](http://www.hse.gov.uk/offshore/ageing.htm)
- Completed initial inspections at BP, Apache and Conoco Philips
- Completing next phase of inspections at Talisman, Total, TAQA, Perenco and Centrica
- Encouraged the development of an industry network with Oil and Gas UK
- Initiated an update of OIS 4/2009 (all topics)
- Initiated a range of technical research projects on Ageing
RAISING AWARENESS

- Offshore Europe 2011, Aberdeen, 6 – 8 September 2011
- Asset Ageing and KP4, Aberdeen, 5 April 2011
- 6th Annual Asset Integrity Management Summit, Abu Dhabi, 20-23 March 2011
- HSE in Oil and Gas Exploration and Production, Kuala Lumpur, 6-8 December 2010
- Asset Integrity Summit, Aberdeen, 24 November 2010
- Energy Institute Seminar: Life Assessment, Aberdeen, 2 November 2010
- Oil & Gas UK Operators Council Meeting, Aberdeen, 14 October 2010
- FPSO Forum, Aberdeen, 13 October 2010
- HSE launch of KP4, Aberdeen, 28 July 2010
- DNV Seminar: Tactics for Ageing Offshore Installations, Aberdeen, 22 June 2010
- PSA Seminar: Ageing and Producing Life Extension, Stavanger, 7-8 April 2010
OSD AGEING WEBPAGE
http://www.hse.gov.uk/offshore/ageing.htm

- Primary source of information on ageing offshore installations
- To provide information on:
  - Press releases
  - Inspection findings
  - Operational issues
  - Standards, technical / guidance documents
  - R&D
  - Industry meetings
  - Relevant websites (e.g. PSA, EI)
Managed by Oil and Gas UK under STEP CHANGE

90 members, operators, ICPs, designers, contractors, plus the regulator HSE

Purpose
  - share good practice
  - identify key elements in ageing processes
  - develop guidance

Guidance on the Management of Ageing and Life Extension

Benchmark for OSD KP4 inspections

Next phase of network, support dissemination of good practice??
TECHNICAL DEVELOPMENT

- Mapping exercise with EI
- Data collection, analysis and trending from other industries.
- Ageing workforce best practice.
- Production/repair influence factors on decision makers.
- Corrosion deluge pipework best practice.
- JIP on ageing of composites.
- Other ideas/thoughts/suggestions welcomed!
INITIAL INSPECTION
APPROACH

- All DH inspected 2010/2013
- Inspection of DH AIM (not installation specific)
- Primarily onshore with offshore sampling
- Focus on Thorough Review
- All topic areas, except Diving, Occ Health, EER, HF
- All topic areas involved in first 3 inspections BP, Apache and Conoco Philips
- Development of KP4 topic based templates along KP3 (including traffic lights) (POPMAR)
- Process = kick off, onshore, offshore, close out
- Undertake review after first 3 inspections (10.03.11)
REVISED INSPECTION APPROACH

● 3 PHASES

● 1. Initial inspection.
   2. Routine MH inspections over 2-3 years.
   3. Feedback to the industry

● Phase 2 emphasis is offshore inspection looking at KPIs

● Phase 3 emphasis is good practice not traffic lights

● Feedback through annual reviews, annual industry progress report, topic guidance, presentations, seminars etc.
Industry performance data eg. RIDDOR, enforcement action, HCR reduction, ORAs, etc at DH and industry level.

Development and implementation of long term installation plans

Development of guidelines and sharing of good practice

Engagement of the workforce on ALE matters
## INSPECTION PLAN

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>INSPECTION DATE</th>
<th>DUTY HOLDER</th>
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<tbody>
<tr>
<td>Sep 2011 – Mar 2012</td>
<td>September 2011</td>
<td>Diamond Drilling, N Sea Producer</td>
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<td></td>
<td>October 2011</td>
<td>BG Group</td>
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<td></td>
<td>November 2011</td>
<td>Maersk Oil</td>
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<tr>
<td></td>
<td>December 2011</td>
<td>CNR</td>
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<tr>
<td></td>
<td>January 2012</td>
<td>Transocean</td>
</tr>
<tr>
<td></td>
<td>March 2012</td>
<td>Chevron</td>
</tr>
<tr>
<td>Apr 2012 – Mar 2013</td>
<td>Shell, Amec, Bluewater, Premier Oil, Wood Group, HRL, Nexen, Petrofac, Marathon, Noble Drilling, Ensco, BHP</td>
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WHAT WE HAVE FOUND FROM THE INSPECTIONS TO DATE

- Everyone embraces the concept and has a good story to tell
- No approach is fully developed and all still have lots to do
- Very open and receptive to the regulator
- KP4 is a big help to highlight ageing, but this is all business driven
- All allocated additional resources
- Evidence of long term planning
AGEING AND LIFE EXTENSION
GOOD PRACTICE

- A co-ordinator appointed
- Policy and strategy developed
- A review/gap analysis of infrastructure completed
  - All technical authorities, ICPs, senior management and workforce
  - Long term review of each installation
  - Results integrated into the safety case
  - Includes HR and hardware issues
  - Long lead times considered
  - The importance of ageing publicised onshore and offshore
AGEING AND LIFE EXTENSION
GOOD PRACTICE (Continued)

- Ageing integrated into the SMS
- The consequences of failing to manage ageing costed
- Key performance indicators developed (ORAs, SCEs impaired or deferred etc)
- Performance trending / histories reviewed
- Trigger points established (plant, people, documentation, etc)
- Issues communicated with the workforce
- HAZOPs revisited every 5 years, etc.
AGEING AND LIFE EXTENSION ISSUES ...

- Sometimes perceived as a project
- Disconnect between the policy and strategy and day to day technical authorities activities (not embedded)
- Lack of long term KPIs
- Obsolescence is a major problem
- Misunderstanding of ageing vs day to day management
- Getting staff
WHAT NEXT FOR KP4?

- Continue with the inspection programme, focusing on the development and delivery of long term plans.

- Work more with the industry by:
  - Developing technical guidelines for ALE.
  - Identifying and disseminating good practice from inspections at seminars and workshops.

- Maintain the profile, still a lot to do!
QUESTIONS

KP4