Breaking down the barriers between wells P&A and platform decommissioning

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Challenges

- The major activities are performed like a relay race
  - Wells P&A
  - Shutdown and cleaning
  - Engineering down
  - Preparations for removal
  - Normally unattended installation (NUI)
  - Final preparations (heavy lift vessel)
  - Removal

- Certain facilities require external accommodation solutions when platform systems are shut down

Sequential timeline

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- Offshore P&A
- Eng Down & Cold Phase Preps
- Normally Unattended Inst. (NUI)
- Final preps
- Topsides Removal
- Jacket Removal
Challenges

- One operation at a time
Objectives

- Demonstrate that efficiency on total decommissioning scope can be improved by integrating P&A work and platform decommissioning
- Early completion of decommissioning work prior to cold phase ready for removal
- Improve technology (P&A) and execution efficiency by using an integrated schedule, eliminating interfaces and sharing resources
- Reduce decommissioning costs significantly by SIMOPS (20 – 30%)
Aker Solutions decommissioning

- Modifications for decommissioning
- Deactivation
- Prepare for removal
  - Utilities
  - Hook down modules, MSF, bridges and flare
  - Install lifting points
Decommissioning project execution experience

Continuous business for 21 years
Halliburton wells P&A

- Traditional well service and surface decommissioning provider
  - Discrete services
  - Bundled services
  - Turnkey projects

- Include drilling contractor
  - Bundled services
  - Turnkey projects

- Provide full decom services
  - Extended co-operation with decom provider
Collaboration

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Success criteria

- Focus on the total SOW
  - Reduce total time for wells P&A, decommissioning and removal
  - Optimise the total decommissioning schedule rather than days per well
- Alignment of goals
  - All parties
- Joint delivery model
  - Accountability / ownership
- Commercial alternatives
  - Mutual benefit
- Common environment
  - Operations room
- Performance drive
  - Estimated time
  - Service quality
  - Service alignment
Organisation

**Step 1: Strategic alliance with P&A contractors, piloting integration of well P&A (Halliburton) with topsides logistics**

**Process**
- Execution strategy
- Scope definition / split
- Interface management
- Overall planning and risks
- Resources
- Optimisation using LEAN
Typical timeline for P&A, EDC, mods and removal preps

Activities on DP

Well disconnect -> Prep. for MDR -> COP process -> Clean process -> ED process -> Remove process

P&A – Bottom plugs

P&A – Remaining plugs

P&A – Conductor recovery

Remove MDR

Gen removal preps cold

Gen removal preps cold and hot work after bottom plugs and declassification

Gen remove preps-cold

COP process

Clean process

ED process

Remove process

Prep. for MDR

Mod removal preps cold

Mod removal preps cold and hot work after bottom plugs and declassification

Timeline on DP after cold phase (HLV in field)

Final rem. preps topside

Final rem. preps jacket

Final rem. preps cold

Final rem. preps hot

Lift and transport of topside

Lift and transport of jacket

Lift and transport of cold

Lift and transport of hot

Onshore disposal topside

Onshore disposal jacket

Onshore disposal cold

Onshore disposal hot

Remove MDR

Modify cold phase

Modify temp systems

Final mods

SD/clean we/ut

ED well/ut

Remove w/ut

ED/rem. key syst.
Sequential timeline

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Offshore P&A

Eng Down & Cold Phase Preps

Removal Preparations

Eng Down & Cold Phase

Normally Unattended Inst. (NUI)

Topsides Removal

Jacket Removal

Final preps

Result from SIMOPS and collaboration
Potential cost savings

- Improved P&A technology and reduced duration
- Reduced vessel time
- Integrated planning
- Accelerated schedule
- New estimate

- 22%

1. Operator Project Management
2. Facility Running / Owner cost
3. Wells Abandonment
4. Facilities / Pipeline Making Safe
5. Topsides Preparation
6. Topsides Removal
7. Substructure Removal
8. Topsides Onshore Recycling
9. Substructure Onshore Recycling
10. Site Remediation
11. Site Remediation
12. Monitoring

Current estimate
New estimate
Result from SIMOPS and collaboration
Conclusions

- Aker Solutions to be the integrator - a new concept in the market

- Basis is to optimise the schedule
  - Based on Halliburton P&A technology
  - SIMOPS
  - Common resources
  - Efficient utilisation of available accommodation

- Potential reduction in duration / net costs of 20% through efficient collaboration
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