The Decommissioning Lifecycle
Presentation Outline

- Decommissioning in BP
- Activity Levels
- Licence Agreements
- Liability Management
- Concept Select
- Decommissioning in Design
- Late Life Preparation & Removal/Reuse
- Organisational Capability
- Contracting Strategy
## Decommissioning in BP

### Decommissioning Function

- Provides a realistic assessment of decommissioning costs
- Developing a strategic approach to decommissioning
- Embedding decommissioning thinking in project design and operations
- Ensures decommissioning projects are delivered to the highest standards

### VP

### Decommissioning Project Team

- Operations makes facilities HC free, cleans, flushes & manages integrity until time of removal
- Drilling & Completion responsible for wells plugging and abandonment
- Decom Projects Team develops removal strategy and is overall integrator of activity
- Decom Projects Team work & obtain regulatory approval
- Decom Project Team responsible for execution of facilities removal & disposal

### Decommissioning Manager
Far East Activity

- Immature decommissioning business
- Poor data base and understanding
- Less than 10% facilities removed
- Over 100 facilities abandoned to date
- Varying conditions and complexity
- Supply chain capability immature
- Variably regulated
- Developing decommissioning business
- Less than 10% facilities removed
- Over 30 facilities abandoned to date
- Varying conditions and complexity
- Estimated $500m annual spend, rising
- Supply chain capability developing
- Regulated with derogation
GOM Shelf Activity

- Mature decommissioning business
- Over 45% of facilities removed to date
- Over 40% of wells abandoned to date
- 140 structures and 450 wells p.a
- $600m annual spend, rising
- Efficient & innovative supply chain
- Highly regulated with reefing

Data Source: EFE GOM Offshore Decommissioning Report 2010
Overview of Ideal Decommissioning Cycle

Reality is minimal planning at a late stage
• Clear understanding of regulatory requirements and environmental obligations, both international and local

• Requirement to work with governments to ensure clarity regarding decommissioning obligations with tax & royalty regimes very different to PSA’s

• JV agreements need to embed decommissioning

• Understand decommissioning obligations as due diligence before mergers, acquisitions and disposals
Liability Management

• Ensure sufficient funds are set aside to meet future obligations

• Undertake due diligence with partners or co-venturers

• Ensure cost estimation model has a clear basis, is consistently applied and auditable

• Put in place a regular process to update & check provision
At concept select stage need to clearly understand implications of different project approaches on future cost, environmental impact and liability management.
Topside Design

- Design module lifting points and retain through asset life
- Ensure lifting pad-eyes are on an inspection / re-certification programme to ensure they are maintained in good order

- Design caissons suspended from the jacket structure rather than from the topsides
- Ensure sufficient corrosion protection is installed on caissons to remain effective

- Consider full-life cycle materials for walkway gratings
- Consider installation of GRP grating panels rather than steel
Jacket Design

- Ensure any internal pipe-work within jacket legs is bundled, secured and protected so as to remain intact throughout field life.

- Consider the requirements of decommissioning in jacket design when adding anodes, fabrication aids etc.

- Minimise wherever possible, or design so as to reduce the snagging hazard and/or facilitate removal.
Well Design

- New platform topsides should be designed where possible to allow simultaneous well intervention. Consider available headroom in well-bays, and the provisions for equipment to remove Xmas trees without use of the drill rig.

- Consider conductor/wellhead starter head interface arrangement, to avoid the need for cutting / pinning multi-string casings for removal.

- Ensure cement is appropriately placed to reduce complexity in abandonment, ensuring top of cement is verified and recorded in all cases.

- Ensure any down-hole gauges and chemical injection lines are placed >200’ above the packer to allow circulation or coil tubing cement abandonment, negating the need to recover tubing.

- Ensure the sizing of conductor guides minimises any gap to the conductor.

- Topsides process facilities should be designed to allow end-to-end flushing and connection to a well for disposal of fluids.
Late Life Preparation & Removal/Reuse

WS* 1 - Facilities & Wells Preparation Project
- Prep for Proj Appraise
- Appraise
- Select
- Define
- Execute
- Appraise FM
- WS 1 & 2
- WS 1
- WS 1 Define FM
- WS 1 Execute FM

WS* 2 - Facilities Removal or Reuse
- Prep for Proj Appraise
- Appraise
- Select
- Define
- Execute
- WS 2
- WS 2 Define FM
- WS 2 Execute FM

Appoint AGM
5 Yrs
Appoint PGM

CoP

NUI/MMI/
cold stack
Organisational Capability

- Contracting Strategy
- Organisational Competence
- Organisational Design
- Portfolio & Pace
Contracting Strategy - Conventional

Lump Sum

- Pre-qualification then design competition (FEED)
- Clear cost structure linked to work scope & timing
- Work scope can be poorly understood
- Insufficient time for Front End Loading (FEL)
- Risk lies primarily with contractor

Lump Sum & Reimbursable

- Day rates for subsea and accommodation vessels
- Lump sum for dismantling and heavy lift
- Reimbursable well P&A, lift prep and engineering
- Performance payment linked to completion time
- Operator responsible for contract management
Contracting Strategy – Other Models

**Alliance Model**

- Licence holder ensures capability of the production & maintenance contractor, and is responsible for field environmental impacts & decommissioning programme.

- Duty of care, license obligations, regulator interface and partner obligations.

- Contractor as duty holder accountable for safety case & field production and post-COP hydrocarbon freeing.

- Positive aspects are contractor develops extensive knowledge of facility.

- Potential for contractor to prepare & remove platform.

**Licence Transfer Model**

- Licence transferred to decommissioning contractor at Cessation of Production.

- Contractor ideally involved in Late Life operations.

- Advantages are potential acceleration of decommissioning work, potential savings of over in-house estimates, mitigation of safety and environmental risks & free up operator and co-owners resources.

- Parent company guarantee may be required to meet liability plus staged payments.

- This approach is mature in GOM.
Summary

- Decommissioning is part of an asset lifecycle, it is not just the end game
- Cost is important but so is reputation
- Need to resource for success
- Collaboration is key & market is global