Tapti Decommissioning

Collaborative Journey with Challenges & Opportunities

OISD Seminar on

“Asset Integrity and Safety in E&P”

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Topics of Discussion

• Tapti Decommissioning - Introduction
• Challenges & Opportunities
• Evolution of regulatory framework
• Option Screening
• Engagement strategy
• Approval process
• Opportunities going Forward
Tapti decommissioning scope
## TAPTI PART B OVERVIEW

### TAPTI FIELD OVERVIEW

<table>
<thead>
<tr>
<th>Field</th>
<th>Tapti</th>
<th>Production Type</th>
<th>Gas &amp; Condensate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Water depth (m)</td>
<td>8.7</td>
<td>Location</td>
<td>Arabian Sea, West coast of India</td>
</tr>
<tr>
<td>Maximum Water Depth (m)</td>
<td>37.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Surface Installation

<table>
<thead>
<tr>
<th>Numbers</th>
<th>Type</th>
<th>Total Topside Weight (Te)</th>
<th>Total Jacket Weight (Te)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Wellhead Platforms (STA, STB incl bridge, STC, STD &amp; MTA)</td>
<td>3200</td>
<td>4230</td>
</tr>
</tbody>
</table>

### Pipelines

<table>
<thead>
<tr>
<th>Item</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10” STA-TPP pipeline piggybacked with 2” TPP-STA instrument air line</td>
<td>4537</td>
</tr>
<tr>
<td>12” STC-TPP pipeline piggybacked with 2” TPP-STC instrument air line</td>
<td>4461</td>
</tr>
<tr>
<td>18” STD-TPP pipeline</td>
<td>8995</td>
</tr>
<tr>
<td>20” MTA-TCPP pipeline piggybacked with 4” TCPP-MTA instrument air line</td>
<td>20847</td>
</tr>
</tbody>
</table>

### Wells

<table>
<thead>
<tr>
<th>Item</th>
<th>No of Wells</th>
<th>Total Weight (Te)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wells (Casing and Tubing)</td>
<td>Confidential</td>
<td>5020</td>
</tr>
</tbody>
</table>
Challenges and Opportunities

- First Decommissioning project in India
- Decommissioning regulatory framework still evolving in India
- Lack of clarity on stakeholders expectations
- Lack of a matured supply chain in Decommissioning space
Decommissioning existing regulatory regime - India

OIL FIELDS ACT 1948
- Primary legislation governing offshore O&G E&P
- Provides power for making PNG Rules and Offshore Safety Rules
- Allows GOI to issue licenses and leases which move away from the requirements of the Regime

PNG RULES 1959
- Rule 22
  - Imposes decommissioning obligation on Contractor
  - Contract area to be released in good order in accordance with international practices
  - Decommissioning plan to be prepared and approved by GOI

PNG (Safety in Offshore Operations) RULES, 2008
- Rule 12
  - Decommissioning plan to be submitted to OISD
  - No prescribed methodology but decommissioning plan must at least follow IMO guidelines
- Rule 148
  - Framework for wells abandonment

Terms of the PSC + License/Lease
Evolve Regulatory Framework-Facilities Decommissioning

- **PNG Rules 2008**
  - Decom plan to be submitted to the OISD

- **OISD Guidance notes on PNG Rules 2008**
  - Follow ‘generally accepted international standards and guidelines’
  - IMO Resolution A.672 (16) should be followed (Complete removal for <75m, < 4000 tonnes in air)

**Tapti Abandonment Plan Work Group (TAWG) Report**
- Broad framework for Tapti decommissioning

**Site Restoration Guidelines (SRG) Committee Report**
- Recommended regulations for offshore & onshore decommissioning
Options for screening

- In-situ alternate use, Topside relocate and jacket reefing are the most *environmentally friendly options* with minimum carbon foot prints
- Alternate use in-situ or with relocation provides *maximum economic benefit* to all stakeholders (win-win)
Decommissioning Plan Development strategy

Stakeholders Engagement strategy

- Inform
- Educate
- Consult
- Dialogue
- Collaborate

Options Screening process

- Fair
- Transparent
- Objective
Screening process

- Identify the Abandonment Options
- Identify the evaluation criteria
  - Safety, Environment, Societal, Technical and Economics
- Assign the criteria importance or weightage
  - All criteria are equally weighted in CA process
- Performance evaluation as a sum of scoring on criteria and weightage
- Agree on the two tier screening as per the complexity/building blocks
- Agree on a judicial mix of qualitative and quantitative scoring across the two tier screening process
- Ensure the participation of key stakeholders in performance evaluation

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## COMPARATIVE ASSESSMENT PROCESS (2)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sub-Criteria</th>
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</thead>
<tbody>
<tr>
<td>Safety</td>
<td>Project risk to personnel – Offshore</td>
</tr>
<tr>
<td></td>
<td>Project risk to other users of the sea</td>
</tr>
<tr>
<td></td>
<td>Project risk to personnel – Onshore</td>
</tr>
<tr>
<td></td>
<td>Potential of a high consequence event</td>
</tr>
<tr>
<td></td>
<td>Residual risk to other users of the sea</td>
</tr>
<tr>
<td>Environment</td>
<td>Seabed Disturbance</td>
</tr>
<tr>
<td></td>
<td>Noise and Vibration</td>
</tr>
<tr>
<td></td>
<td>Loss of Contamination</td>
</tr>
<tr>
<td></td>
<td>Energy, Emission, Resource Consumption</td>
</tr>
<tr>
<td></td>
<td>Legacy Impact</td>
</tr>
<tr>
<td>Technical</td>
<td>Technical Challenge</td>
</tr>
<tr>
<td></td>
<td>Weather Sensitivity</td>
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<tr>
<td></td>
<td>Risk of major project failure</td>
</tr>
<tr>
<td></td>
<td>Technological demand and track records</td>
</tr>
<tr>
<td>Societal</td>
<td>Commercial Impact on Fisheries</td>
</tr>
<tr>
<td></td>
<td>Socio-Economic Impact on Communities and Amenities</td>
</tr>
<tr>
<td>Economics</td>
<td>Cost</td>
</tr>
</tbody>
</table>
Approval process

- **Approval Role**: MoPNG, DGH, OISD
- **Consulting Role**: MoEFCC, MoD, MoS, MoA&FW (DoF)
- **For Information**: Coastal State Government nearest to the decommissioning site
Opportunities – Going Forward

- Single window of approval **Vs** multiple agency engagement by the Operator
  - Nodal agency to support the consultative process
  - Ease in coordination
  - Expedites the approval process

- Enablers for maturing Rig to Reef option
  - Develop scientific foundation
    - Research and engage to establish benefits from reefing, where.
    - Agree reefing objectives case by case (ecosystem, coastal protection, etc)
    - Develop feasibility studies and pilots in partnerships with scientists, govt and operators

- Legislative/legal framework and regulatory support
  - Approval Multi Department efforts (MOPNG, Dept of Fisheries, Ministry of Shipping, Navy)
  - Transfer of ownership of the structures

- Central database for supporting probable reefing location
  - Partnerships with scientific and other interested communities
Supply chain efficiency opportunities

- Demolition and salvage mindset
- Campaign bundling
- Contractor autonomy- “Handsfree approach
- Functional basis-Defining the end-state.
- Schedule flexibility
- Capacity and Capability (e.g. limited onshore recycling yards)
- Competition
Share Good Practice And Collaborate

Expanding collaboration into new areas

- Talent
- Operating partners
- Technology
- Vendors
- Technical capability
- Regulators