



Document No.	GP 10-43
Applicability	Group
Date	11 June 2008

GP 10-43

Moving and Securing of Mobile Offshore Drilling Units

Group Practice

**BP GROUP
ENGINEERING TECHNICAL PRACTICES**

Foreword

This is the first issue of Engineering Technical Practice (ETP) BP GP 10-43.

DWOP Summary

Assessment of capability to operate at a particular site

- Prior to contracting a MODU for a specific location the suitability of the unit to operate at that site shall be assessed by the wells team.
- The assessment criteria for operation at a particular site shall be in compliance with ETP GP 10 - 43. A mooring analysis shall be performed for floating drilling operations prior to drilling with a moored MODU or in a new area or when the expected environmental conditions dictate this as being prudent
- The self-elevating unit deck elevation shall as a minimum be such that there is clearance between the underside of the deck and the extreme wave crest.
- For a self-elevating unit the foundation assessment shall predict the degree of spud can penetration and potential leg punch-through. Self-elevating unit deployment shall not proceed unless this risk can be mitigated.
- For a self-elevating unit seismic structural stability shall be assessed.

Metoccean

- For each MODU deployment site specific wind, wave and current criteria shall be derived using best practice procedures in accordance with ISO 19901-1 and verified by BP's Metoccean specialists.
- The 100 year return period conditions shall be used for storm survival assessment unless local regulation is more stringent.

Foundation

- BP's geotechnical specialists should be consulted to determine if site-specific geotechnical investigation is necessary
- For self-elevating units a scour assessment shall be undertaken unless the foundation is rock or stiff clay.

Copyright © 2008, BP Group. All rights reserved. The information contained in this document is subject to the terms and conditions of the agreement or contract under which the document was supplied to the recipient's organisation. None of the information contained in this document *shall* be disclosed outside the recipient's own organisation without the prior written permission of BP Group, unless the terms of such agreement or contract expressly allow.



Towing to Site (only applies if the rig is on contract to BP during the move to site)

- The weather conditions likely to be encountered during the tow and transit times between appropriate locations for shelter should be identified and the tow planned to minimise risk to the MODU.
- The number of personnel carried during the tow should be minimised whilst ensuring that the minimum manning requirements are maintained
- For a self elevating unit the tow route and procedures, including contingency arrangements, shall be approved by the SPU Marine Authority prior to any voyage. The passage plan for the tow shall include and identify ports of refuge and emergency jacking locations (where required) as a contingency against severe weather conditions.

Securing at SiteMooring a column-stabilized unit or monohull

- The mooring design shall be in accordance with ISO 19901-7 or API RP 2SK.
- The anchor pattern shall provide appropriate clearance of any subsea equipment, pipelines or other moorings; the clearance required should be site specific. In the event of any mooring lines crossing a pipeline or other mooring line the design shall include a risk assessment to determine the acceptability of the MODU mooring layout and appropriate protection measures.
- Drag embedment anchor performance shall be verified by the load applied during installation. Suction embedment anchor performance shall be verified by calculation and installation in accordance with design requirements and approved by BP's geotechnical staff.
- The condition of mooring systems and compliance with Recognised Classification Society (RCS) requirements shall be verified prior to deployment. The deployment of the mooring system without damage, rotated chain links or wire kinks and with connectors made up in accordance with the manufacturer's specification shall be verified.
- No anchor shall be placed on the bottom until approval has been given by the BP Marine Representative.
- MODU anchors shall not be placed within the anchor pattern of another barge/vessel without a full risk assessment and hazard analysis having been completed.
- When recovering an anchor near a subsea obstruction, the anchor handling vessel position shall be accurately monitored at all times by surveyors onboard the vessel or MODU. The position of the anchor handling vessel should be monitored until the anchor is seen at the vessel's stern roller. When recovering across a pipeline, the anchor shall be brought on deck and secured. When a MODU is moored close to a production installation the MODU shall be winched to the 'stand-off' position prior to the recovery of anchors
- Risk assessment shall be conducted whenever handling heavy mooring equipment over subsea infrastructure to address dropped objects. A safe handling zone shall be established. (reference to Section 23 – SIMOPS)

Locating a self-elevating unit

- A Survey Representative should be utilised on the MODU to provide assurance on the survey elements of the MODU positioning operations and to assist the BP Marine



Representative. The Survey Representative is responsible for confirming whether the positioning objectives have been attained.

- Moving a self-elevating unit alongside a production installation constitutes a major accident risk. Consequently a comprehensive risk assessment shall be performed, which shall address as a minimum the hazards from platform import/export risers, subsea pipelines and ongoing production operations.
- Where a self-elevating unit is to be located alongside a production installation the minimum distance between hull and the extremity of the installation shall be not less than 1.5m after due allowance for inclination, rotation and lateral movement of the unit under jacking.
- Where a self-elevating unit is to be deployed in an area with prior spud can holes on the sea bed, usually in close proximity to a production installation, appropriate measures shall be taken to avoid spud cans sliding into prior spud can holes.
- For final manoeuvres alongside production installations, the self-elevating unit should be winched into position and not pulled into position by vessels. For moves alongside production installations physical gauging systems deployed over the stern should be used to give a visual indication of the MODU's position relative to the target.

Jacking a self-elevating unit

- The condition of the jacking system and adequacy of jacking procedures shall be verified prior to deployment of the unit. This verification should be performed during the rig audit. When a unit is to be moved when no rig audit has been performed, for example an in-field move or a move to a different location, the well site leader shall verify that there are no known defects with the jacking system and that appropriate jacking procedures are available and will be utilised
- The self-elevating unit legs shall be preloaded to apply the 100 year storm load to each spud can. Depending on the ballast water capacity this may be undertaken in a single ballast transfer or by sequential loading of each leg. This should be undertaken with the hull close to the sea surface, in accordance with unit Marine Operations Manual, to control risks in the event of sudden penetration. For exploration wells not adjacent to fixed platforms where the ballast water capacity is not sufficient to preload to the full 100 year storm, but the soils are such that full foundation storm capacity will be reached with not more than 250mm settlement, then it is acceptable to proceed providing settlement monitoring and re-jacking is undertaken.

Dynamically Positioned MODU (only applies if the rig is on contract to BP during the move to site)

- A DP rig move plan shall be prepared for every move where acoustic beacons or ground tackle needs to be relocated, and in particular when the BOP will remain in the water throughout the move.
- The DP rig move plan shall include the location of the planned activity, all associated anchor patterns, existing pipelines, subsea infrastructure or other potential hazards in the area.
- For any move over subsea infrastructure whenever there is anything hanging below the MODU keel, the production installation OIM shall approve the rig move plan and be notified immediately prior to commencement of the move. All infield moves shall be approved by production installation OIM.



- When the BOP remains in the water during a rig move, the depth at the lowest point of the BOP shall be determined in relation to the seabed and any subsea infrastructure and confirmed at regular intervals during the move.
- The rig move plan should evaluate available water depth not only at each location but also along the entire length of the intended track and the vicinity.

Uncontrolled Copy



Table of Contents

	Page
Foreword	2
Introduction	7
1. Scope	8
2. Normative references	8
3. Terms and definitions	9
4. Symbols and abbreviations	9
5. Assessment of capability to operate at a particular site	10
5.1. General	10
5.2. Mooring analysis	10
5.3. Column-stabilized unit and monohull	10
5.4. Self-elevating unit	11
6. Metocean	11
7. Foundation	11
8. Towing to Site	12
8.1. General	12
8.2. Self-elevating unit	12
8.3. Moored column-stabilized unit or monohull	13
9. Securing at Site	13
9.1. Mooring a column-stabilized unit or monohull	13
9.2. Locating a self-elevating unit	14
9.3. Jacking a self-elevating unit	15
10. Dynamically Positioned MODU	15
10.1. Rig move plan	15
10.2. When the BOP will remain in the water throughout the rig move	16
11. SIMOPS	17

