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GP 10-05

Casing and Tubing Design

Guidance on Practice for

**BP GROUP
ENGINEERING TECHNICAL PRACTICES**

Foreword

This is the first issue of Engineering Technical Practice (ETP) BP GP 10-05.

The introduction to this ETP mirrors section 14 of the revised DWOP.

All directional Drilling & Surveying activity shall conform to Engineering Technical Practice BP GP 10-05 - Directional Drilling & Survey.

Scope of application

1. ETP GP 10-05 applies specifically to subsurface well collision risk. It will be applied to all operations where this risk presents a threat to personnel safety or the environment. This will be determined by means of a risk assessment.

Data structures, integrity & management

2. A Master Database of all well trajectories shall be maintained and be the subject of a written data management plan covering the full life of the field. The co-ordinate reference system used by the Master Database shall be determined by a Company Surveyor. This database shall be classified as safety critical and managed accordingly.

Surface location management: new, single well locations

3. The final position shall be determined as the well is spudded. The Electronic Well Location Management (eWLM) process shall be used to manage the planned and final location of the well. The drilling unit shall be positioned and the final location confirmed using approved positioning contractor procedures and supervised by an independent survey representative.

Surface location management: built facilities (platform, sub-sea template, land site)

4. The surface position shall be managed in accordance with the plans, procedures and documentation controlled by the respective project authority.

Survey programme design

5. Survey programmes shall be designed to meet clearly defined quantitative positioning objectives such as:
 - Meet local government regulations.
 - Penetrate the geological target(s) set in the well's objectives.
 - Minimise the risk of intersection with any nearby wellbore.
 - Drill a relief well.
 - Avoid location of shallow hazards.

Uncertainties shall be calculated using approved survey tool error models and calculation methods. The well survey programme shall take surface location uncertainty into account and shall contain sufficient redundant data to eliminate the possibility of undetected gross errors.



Anti-collision scan

6. Anti-collision scans for all wells shall be run against the Master Database. The minimum separation distances shall be calculated using the equations in ETP 10-05. SPU staff and contractors involved in the activity shall be trained and competent in the methods employed.

Operational Control and Assurance

7. Directional drilling and surveying operations shall be conducted by contractors in compliance with their approved procedures. Survey programmes shall be executed in accordance with their designs or any approved changes thereto. Where operational problems occur, any modifications to the programme shall be shown to fulfil the same requirements as the original design, or a Management of Change process undertaken to revise the original requirements. SPU staff shall be responsible for implementing and monitoring compliance.

All procedures, directional software and the software settings employed by contractors, wellbore survey tools and their running procedures Joint Operating & Reporting Procedures (JORPs) shall be assessed by the EPT Well Positioning Specialist and approved by the Segment Engineering Technical Authority for Directional Drilling and Surveying.

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Documents
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Page 3 of 16

Table of Contents

	Page
1. Scope	6
2. Normative references.....	6
3. Terms and definitions.....	7
4. Symbols and abbreviations.....	7
5. General.....	8
5.1. Introduction.....	8
5.2. Application.....	9
5.3. Implementation	9
5.4. Revision.....	9
5.5. Exceptions	9
6. Directional database	9
6.1. Master database	9
6.2. Directional data management plan.....	10
6.3. Offset well data	10
6.4. Coordinate reference system	10
6.5. Well reference point.....	10
6.6. Definitive trajectory	10
6.7. Error models associated with surveys.....	10
6.8. Verification of sub-surface databases	10
7. Surface location management	10
7.1. Wells drilled from individual locations.....	11
7.2. Wells drilled from or through a built facility	11
8. Survey programme design.....	12
8.1. Objectives of a survey programme.....	12
8.2. Approval of tools, procedures and error models.....	12
8.3. Positional uncertainty of wellhead	12
8.4. Approval of models and algorithms	12
8.5. Blow-out contingency requirement	12
8.6. Redundancy in survey data.....	12
8.7. Guidance: Target location tolerances.....	12
9. Anti-Collision.....	13
9.1. Requirement for collision scan	13
9.2. Design approval prior to drilling.....	13
9.3. Classification of consequences of collision.....	13
9.4. Minimum separation.....	13
9.5. Verification of position in relation to tolerances	14
9.6. Competence in anti-collision methods.....	14
9.7. Loss of safe separation	14



9.8.	Guidance: Presentation of anti-collision tolerances	14
10.	Survey operations	14
10.1.	Compliance with QC procedures.....	14
10.2.	Programme compliance with design	14
10.3.	Verification of survey results	14
10.4.	Magnetic declination	14
11.	Assurance.....	14
11.1.	Assessment of contractors.....	14
11.2.	Approval of software	15
11.3.	Calculation methods	15

