
Drilling Project and Risk Management

The primary function of drilling professionals is to maintain a high level of control over the expenditure during the design, construction and completion of wells.

In order to do that the 'risks' involved in these operational phases must be understood to be controlled.

The objective is to continually improve performance by structured learning during all phases; both active learning by taking immediate actions and passive learning when a period of review must be undertaken before implementing change.

All change must be undertaken using any approved 'management of change' principle.

Level:

Skilled

Prerequisites:

Basic drilling engineering and wellsite operations.

Audience:

Drilling Engineers, Drilling Supervisors, asset team members and service company personnel.

To learn about:

Drilling project management

- ✚ Organisational requirements
- ✚ Front End Engineering Design
- ✚ Assess & Define the project
- ✚ Project Planning and Scheduling
- ✚ Risk Management
- ✚ Procurement Management
- ✚ Design phase
- ✚ Execute phase
- ✚ Evaluate phase

Drilling Rig procurement

- ✚ Drilling business model
- ✚ Tendering documents
- ✚ Rig comparisons

Drilling risks

- ✚ Scenario
 - ✚ Trajectory
 - ✚ Earth Model
 - ✚ Rig Selection
 - ✚ Mud Weight
 - ✚ Wellbore Stability
 - ✚ Rock Mechanics
 - ✚ Casing Point
 - ✚ Well Bore Size
 - ✚ Tubular Design
 - ✚ Cement Design
 - ✚ Bit Selection
 - ✚ Drillstring Design
 - ✚ Hydraulics
 - ✚ Formation Evaluation
 - ✚ Torque and Drag
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- ✚ Gains
 - ✚ Losses
 - ✚ Stuckpipe
 - ✚ Mechanical

Drilling time and cost estimating

- ✚ Slow, Average and Fast timing
- ✚ Probability based P10, P50 and P90

Competency Requirement

Training, coaching and development activities must be designed to add knowledge about key processes aiming to increase an individual's proficiency aligned with a published competency requirement for units within specific tasks.

Training

Is by the pedagogic method wherever possible; by short lecture followed by a short practical.

Material is in PowerPoint™ form and a soft copy may be obtained in .pdf upon completion of the class.

Daily schedule

Day 1

09:30 – 10:00 welcome, HSE and introduction

10:00 – 11:00 drilling organisation

11:00 – 11:15 break

11:15 – 12:15 project planning

12:15 - 13:00 lunch

13:00 – 14:00 procurement

14:00 – 14:30 break

14:30 – 16:00 drilling business model

Day 2

09:30 – 11:00 scenario

11:00 – 11:15 break

11:15 – 12:15 trajectory

12:15 - 13:00 lunch

13:00 – 14:00 earth model

14:00 – 14:30 break

14:30 – 16:00 rig selection

Day 3

09:30 – 11:00 mud selection

11:00 – 11:15 break

11:15 – 12:15 wellbore stability rock mechanics

12:15 - 13:00 lunch

13:00 – 14:00 casing design risks

14:00 – 14:30 break

14:30 – 16:00 wellbore geometry risks

Day 4

09:30 – 11:00 well integrity risks

11:00 – 11:15 break

11:15 – 12:15 bit selection risks

12:15 - 13:00 lunch

13:00 – 14:00 drillstring design risks

14:00 – 14:30 break

14:30 – 16:00 hydraulics risks

Day 5

09:30 – 11:00 drilling risk register

11:00 – 11:15 break

11:15 – 12:15 slow, average and fast times and cost estimates

12:15 - 13:00 lunch

13:00 – 14:00 probability based times and costs

14:00 – 14:30 break

14:30 – 16:00 wrap up

Coaching

Upon completion of any classroom based training the emphasis should be on vocational experience in actually doing the job. Objectives can be set for levels of proficiency of each task or for the overall unit of competence.

It is at this level where highly specialised coaches can be assigned to individuals or small groups to witness the performance of the tasks and to give advice on techniques which can be used to increase the effectiveness and mastery of the topic.

Developing

The development of the individual is dependent upon the individual having the correct skill set at the appropriate proficiency and the organisation having the opportunity for advancement.

Organisational competence is at a level above individual competence and is often overlooked; but is essential to retain a motivated workforce. The principle of organisation competence is based on the competency of Organisation, Process and People allowing sufficient manpower for VASTT; vacation, assignment, sickness, training and termination.