Course overview

This one day course provides detailed guidance on the application of Failure Modes and Effects Analysis (FMEA) and Failure Modes, Effects and Criticality Analysis (FMECA) to support industry’s drive to assess, manage and control risks in subsea drilling operations.

This course is aimed at engineers, managers and technical specialists responsible for delivering or managing reliability, integrity and technical risks in drilling and BOP equipment design, and rig operation. It provides:

- Knowledge of the FMEA/FMECA approach and how it can be used to support system design, maintenance and operation
- Knowledge of the different types of FMEA/FMECA, their purpose and when they are best applied
- An understanding of essential preparation and responsibilities for effective implementation
- An understanding of how to identify failure modes, mechanisms, causes and effects
- An understanding of how to assess criticality and the need for follow up actions
- Hands on experience of working through the FMECA process with group exercises

FMEA/FMECA is an essential input for Reliability Centered Maintenance and it is recommended that this course is undertaken in conjunction with the RCM course for subsea drilling systems scheduled separately.

Our instructors

Our dedicated team is an internationally recognised authority in the field of subsea reliability engineering, including drilling applications, and have been providing training to the industry for a number of years. We have considerable experience in the application of reliability techniques to manage technical risk and have worked with oil companies, drilling contractors and equipment vendors as part of design, operations and maintenance.

First and foremost we are highly experienced engineers, and we want to ensure that your company benefits from industry leading technical expertise and experience.
Course Program

Session 1
Introduction to FMEA/FMECA
- What is meant by the terms "FMEA" and "FMECA"
- The basic FMEA/FMECA structure
- Definitions and understanding the fundamentals
- How the use of FMEA and FMECA can support delivery and operation of reliable technology
- Industry standards and recommended practices

Session 2
Management for effective analysis
- Roles and responsibilities
- Preparatory information and definitions
- Reporting and follow up actions

Session 3
Types and uses of FMECA
- When to apply different types of FMEA/FMECA:
  o Design
  o Manufacture
  o Operation
  o Maintenance

Break

Session 4
Methodology part 1: Failure identification
- System breakdown
- Identification of failure modes, mechanisms and causes
- Identification of failure effects

Session 5
Workshop 1
- Overview of subsea BOP case study
- Development of a FMECA for the case study - Part 1: failure identification
- Feedback from exercise and discussion

Lunch

Session 6
Methodology Part 2: criticality analysis
- Quantitative assessment of failure modes and effects
  o Failure mode frequency
  o Prevention, mitigations and detectability
  o Consequence severity
  o Risk Priority Numbers
- Identifying follow-up actions
- Completion, reporting and follow-up

Session 7
Workshop 2
- Development of FMECA for the subsea BOP case study - Part 2: quantitative assessment and follow up actions
- Feedback from exercise and discussion

Break

Session 8
- Review of key learning points, discussion and questions

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