HSE session focuses on training, risk assessment

RIG CREW TRAINING

A TRAINING PROGRAM that is targeted at specific skill sets provides a valid return on a company's investment. Organizational learning and program evaluation ensure that the training curriculum remains valuable to the organization throughout the life of the program. The authors will describe a successful training program that bridged the gap between machine capabilities and human skills. The program was conducted in support of a land rig construction project utilizing leading edge technology in rig components and manufacturing techniques. The training was designed to accelerate the learning curve and provide the rig crews with a foundation of skills and knowledge that allowed them to excel beyond company and industry expectations. The curriculum was developed in part from learnings taken from previous newbuild programs and from equipment manufacturers' recommendations and expertise. The 10-day program utilized actual rig components and allowed the crews to practice hands on exercises of critical HSE, operational and people skills.

Helmerich & Payne's training program was designed to accelerate the learning curve and provide the crews with a foundation of skills and knowledge. IADC/SPE 87102

This training program differs in scale from other industry efforts. The classes were delivered at a brisk cadence: 44 people (two newly-formed crews) were trained every month to meet the rig fabrication schedule. Company leadership made a substantial investment of $2.5 million into skill development and $2.5 million of rig assets for the hands-on learning practice. Other distinguishing factors included the use of experiential learning techniques and the use of structured evaluations to ensure continual improvement in the program so that organizational needs are met.

The combined effect of focused training, organizational learning and leading edge technology has lead to superior performance in the field. To date, the TRIR is 64% lower and turnover is 83% lower than comparable, in-house newbuild programs. Out of 122 wells drilled by these new rigs, 71% are below and 7% are on target with the customer's AFE.

Specialized Rig-Crew Training Produces Results for New Technology Drilling (IADC/SPE 87102) **Richard A Plageman**, **Scott A Milliren**, **Dave Blackman**, **Helmerich & Payne International Drilling Company**.

DRILLING FLUID MANAGEMENT

North Sea area environmental regulations and practices and focus on reduction of drilling costs have limited the discharges of drilling fluid and drilling fluid chemicals. A method for efficiently recycling water-base drilling fluids has been developed, conducted in a way that is beneficial both for the drilling fluid supplier and for the operator. Slop is brought back onshore for treatment and reusable fluids from the slop treatment are brought back into the drilling fluids.

The authors will describe in detail how the total fluid management system operates, including the compensation format for the drilling fluid supplier and the operator. The author will also describe the different actions taken to reuse water-base drilling fluids and how these actions generally reduce total drilling costs. The different systems implemented to minimize loss of drilling fluids and recycling of drilling waste streams will be described as will the challenges in establishing sound targets for optimum reuse depending on fluid systems, balancing economy and environment.

Application of Water-Based Drilling Fluid – Total Fluid Management (IADC/SPE 87103) **Bjornung Jensen**, **J E Paulsen**, **A Saasen**, **Statoil ASA**; **O I Prebensen**, **Swaco Norge A/S**; **H Balzer**, **M-I Norge A/S**.

RISK ASSESSMENT

The author will describe the outcome of a study to demonstrate that the drilling operations planned for the dynamically positioned drillship Belford Dolphin can be carried out with an acceptable level of environmental risk.

The basis for the study is the vessel's past history, the operating experience for similar vessels, the subsea equipment design and the uncertainties associated with the subsurface geology of the project.

Quantitative Risk Assessment (QRA) has been applied to estimate the probability of a hydrocarbon spill resulting from a loss of station for the rig's operations. A series of event trees were developed to model the contributing scenarios, requiring input determined from historical data of this and similar drillships. Input was also ascertained from assumptions based on the current project description and available geological data. A system to compile all the necessary data for future DP operations and remove as much assumption as possible would be beneficial.

For the sample well, the combination of probabilities of loss of station, loss of riser margin and loss of well integrity gives an overall probability of hydrocarbon spill per day. This potential for a possible oil spill event arising from the loss of station during DP operations

falls sufficiently below the predetermined criterion for risk acceptance for a single well. If this were not the case, mitigation measures would have to be put in place.

The study is a useful combination of contributing scenarios that lead to one disaster scenario. It is a method that can possibly be applied to similar drillship operations or any operation that has a number of distinct influential circumstances contributing to a certain undesired situation.

Quantitative Risk Assessment for DP Operations Aboard the Belford Dolphin (IADC/SPE 87104) **Mark James Cowan**, **S Naismith**, **Technica-NNC Limited**; **P Linzi**, **Eni UK Ltd**.

SAFE DRILLING OPERATIONS

Notwithstanding many diligent efforts by ExxonMobil and the industry, people are still being hurt everyday. This is not a situation that anyone should tolerate.

Success in safety requires both a disciplined systematic approach and a culture where people are aligned with the objective and actively involved in its pursuit.

The ExxonMobil Operations Integrity Management System (OIMS) sets corporate expectations for safety management, and the Drilling Safety Management Program establishes tools and practices to meet the operator's specific business needs. These systems are bridged with contractor requirements into a site specific operations safety plan, a concise document describing the safety management systems for the rig.

The safety management process produces the desired results when executed by people that share the company's beliefs about safety and demonstrate behavior consistent with the objective. Unfortunately evidence suggests that there can be a gap between what people say about safety and how they behave.

Safety leadership is the ability and willingness of managers, supervisors and employees to accept personal and team accountability to conduct work safely. Safety leaders hold safety as a core value, understand the purpose of the safety management tools, and actively participate in the programs.

A global initiative was launched in 2001 to develop safety leadership skills in our people. Safety leadership workshops have reached over 4,000 employee and contractor participants by mid-2003.

The workshops are fundamental to the rig start-up process and their impact is notable in the reduction in severity and number of incidents across ExxonMobil's global drilling operations.

The author will focus on these distinct yet mutually dependent critical success factors, safety management and safety leadership, and their impact on safety performance.

Reaching the Drilling Objective "Nobody Gets Hurt" (IADC/SPE 87105) **Donna J Parker**, **ExxonMobil Development Company**.