

# Deepwater Drilling Company Benefits from Reliability Centered Maintenance Analysis

## RESULTS

- 79% reduction in downtime in pipe handling system
- 92% improvement in feet of tubulars tripped between failures
- 66% improvement in downtime hours per event

## APPLICATION

- Deepwater Drilling rig systems

## CHALLENGE

Several recent case studies demonstrate that applying Reliability Centered Maintenance (RCM) analysis to deepwater drilling rig systems improves equipment availability and reduces critical path downtime. This improvement ultimately saves operators money through increased control of spread costs and less potential impact to critical phases of their drilling program. RCM also can positively affect drilling contractors, and other third-party service providers, through additional revenue recovery, more efficient maintenance practices, optimized inventory levels, and most importantly reduced risk to personnel.

## SOLUTION

Over the course of eighteen months, RCM Analysis was applied to downtime and safety critical systems, such as pipe handling, motion compensation, station keeping, blow out preventers, and well control on several ultra deepwater drilling units. These assessments involved rig-based operators and maintenance personnel, shore-based engineering and technical support specialists, particularly from the equipment manufacturer, and also required extensive access to drawings, schematics, manuals, and other technical literature. The analysis drove optimized maintenance routines, training and competency development plans, optimization of critical spares, and also resulted in several OEM upgrades that enhanced operability and maintainability of the equipment.



*Applying RCM analysis to deepwater drilling rig systems improves equipment availability and reduces critical path downtime.*

## Results

Significant improvements in equipment availability have been demonstrated through traditional downtime measurements as well as monitoring the amount of work that the systems have performed between failures. These are significant short term (90 day) improvements that are fully expected to improve as the enhanced maintenance routines, maintenance personnel competency, predictive technologies and optimized critical spare parts fully continue to mature.

While behavior-based safety systems have created a true step-change in safety performance over the last decade, the same cannot be said with-respect-to equipment reliability. By utilizing Reliability Centered Maintenance, systems in deepwater drilling operations and engraining a 'reliability culture' both onshore and off, our industry can deliver a true step-change in overall operational excellence.

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