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Deepwater BOP Control Monitoring – Improving BOP Preventive Maintenance with Control Function Monitoring

F.M. Chapman, R.L. Brown, Ashford Technical Software

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Abstract

The goal of Blowout Preventer (BOP) preventive maintenance is to reduce downtime due to equipment failures. A corollary issue is the reduction of unnecessary maintenance. This becomes increasingly important as the BOP control system ages or nears its five-year maintenance cycle.

Appropriate / timely proactive BOP maintenance can only be performed when accurate function cycle data is available. As such, an effective BOP preventive maintenance program requires accurate record keeping on all BOP function cycles – during drilling operations as well as during testing. Manual record keeping is generally missing or unreliable.

A system has been developed for (1) automatically monitoring and recording BOP control state changes, (2) transporting the state change data to a database server on shore and (3) analyzing and presenting the BOP information to interested personnel via the web. The system provides a detailed historical record of the BOP status. Using this data the number of valve cycles can be accurately counted and the valve cycle information can be used to estimate when maintenance is required for each valve in the BOP control system.

In addition, the information captured by the system can be used to troubleshoot BOP control issues and as input to evaluate BOP operational procedures.