Digital Solution for Octg Running to Control Non Expected Operational Cost and Enhance Efficiency in Completion Operations for Operator Company

Author block: S. TCHOUNDJEU NGATCHOU, VALLOUREC Middle East FZE; T. Cavanha, Vallourec

Abstract

Objectives/Scope: A digital technical approach is implemented to automate and strengthen the process during all key phases of tubulars lifecycle from rig receipt to running, then rig return. The solution provides a unique individual traceability for pipes and accessories to be run for casing and completion strings increasing operation reliability, reducing risk for unexpected operational cost, increasing efficiency, and enhancing the overall pipe management process.

Methods, Procedures, Process: The current process of casing/tubing running heavily relies on manual activity, from string components measurements to sequencing planning up to execution and quality control. The solution uses a combination of different tracking means - data matrix, RFID, barcodes - and reading system - tablets, fixed cameras - to automate and timestamp the overall process at every step of the tubular's lifecycle from rig receipt, pre-tally management, real-time running control and post-running analytics. The backbone of this digital solution lies with accurate traceability through individual data collection at the mills, workshops and rig site paired to unique individual code applied on each item.

Results, Observations, Conclusions: This digital solution for OCTG running and management is compared with similar operations. Two field cases are presented for running OCTG completion strings. After using the digital solution, the results show significant improvements falling into three main categories: reducing tubular management inefficiencies, enhancing running control and risk assessment, and enabling Continuous Improvement with Data management and Analytics. 1. The tubular management inefficiencies are reduced thanks to 100% material traceability, access to accurate lengths, automatic and real time pre-tally revision with configuration of pipe sequence in planning stage and automatic backload manifest after running. 2. The Running control and risk assessment are enhanced through full reliability of the string bit depth as well as and each individual component; providing length reminders and signals for next assembly to be run downhole. Features such as tally reconciliation or adjustments in case of pipe rejection, eliminated the human error risk for similar process done manually in conventional operations. 3. The digitization of running operations enables continuous improvement with data analytics, ranging from accurate reconciliation of tally and make-up reports to running speed, recording and detailing Non-Productive time and any stoppages, and the possibility to compare well performance vs "peer" wells.
**Novel/Additive Information:** Implementing this OCTG digital solution significantly enhances the efficiency and reliability of completion operations resulting in significant cost reduction, mitigating risks of non-productive time by reducing human errors, ensuring safety and integrity of the well and enabling operators to track its assets and monitor running operations in real-time, while paving the way for continuous improvement.