Customer Success Story

AN EXAMPLE OF HOW GE HELPS CUSTOMERS IN THE OIL & GAS INDUSTRY

GE's DECT significantly reduces rig time in S135 drill pipe cutting operation.

Background

An electrical failure experienced during well drilling left our customer's bottomhole assembly (BHA) stationary in open hole for several days. When power was recovered, the BHA was stuck. The customer turned to GE for a solution that could quickly and efficiently cut the 5.875-inch S135 steel drill pipe – meaning shorter rig time and easier recovery of the fishing tool.

Solution

GE's downhole electric cutting tool (DECT) was selected for this operation due to its:

- Fast cutting speed (less than three minutes), which significantly reduces rig time
- Versatility to cut pipe quickly in both tension and compression stress states
- Proficiency at cutting S135 steel while delivering a "machine shop quality" finish
- Real-time data reporting ability confirming cut success (cutter position, downhole microphone response, and motor load)
- Flexibility to cut in a variety of well deviations and fluids (gas, drilling mud, and brine)
- Ability to be deployed on multi-conductor cable using a pump-down method
- Low power requirements (110/240V AC), which reduce the risk of cable/surface equipment-related failures

Result

GE's DECT executed the S135 drill pipe cut in less than three minutes. The tool was pumped to the target depth, saving considerable rig time over alternative conveyance methods.

The tool's real-time feedback confirmed when the cut was successfully completed, allowing the drill pipe (shown) to be quickly recovered to the surface.

Due to the DECT's machine shop quality cut, no clean-up operations were needed prior to the fishing operation, saving thousands of dollars in rig time.

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Job Details

Cutting tool used: GE DECT001, OD: 3.25”

Operational Details			
Material:	S135	Tubing State:	Tension
Pipe OD:	5.875"		
Pipe ID:	5.14"	Minimum Restriction Above the Cut Point:	5.14"
Well Fluid:	Water Based Mud /1.14 SG		
BHT:	75°C	Dev:	90°
BHP:	3000 psi	Cutting Depth:	~3000 m

Low Power Requirements + Rapid Cutting Speed = Exceptional Reliability and Flexibility

The sophisticated design of GE’s DECT allows it to be deployed on most single and multi-conductor wirelines.

The tool’s low power consumption, typically around 1 amp (A) for most cutting operations, reduces the load on the wireline and associated surface equipment and mitigates the risk of failure due to excessive current requirements.

The rapid cutting speed of the DECT (typically around two to three minutes to cut through the pipe wall) also alleviates the need to supply high current loads for extended periods and the associated problems this can entail. These factors add up to an excellent operational record for GE’s DECT.

Proficiency at cutting tough materials fast under a wide range of conditions

GE’s DECT meets the industry’s need for a solution that can quickly and precisely cut the toughest materials. It offers a proven track record of successfully cutting both low and high alloy steels, including 25Cr stainless steel, Inconel 718, and S135.

The DECT has also demonstrated its flexibility to operate in gas, oil, brine, and a range of drilling fluids (with the current record being 1.76 g/cm^3 WBM). In addition, GE’s technical team continues to develop its capabilities to allow operations in the most challenging environments.

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