

MAIDEN VOYAGE FOR CLAXTON'S NEW CUT VERIFICATION TECHNOLOGY ON GULF OF MEXICO PROJECT

Claxton was originally approached by an operator in August 2017 to support a high-profile pile cutting decommissioning work scope. The requirement was to abrasively sever four of the eight 54" main piles below the mudline.

THE PROBLEM

The structure to be decommissioned was the world's first commercial guyed tower production platform in 1,000 feet (305 m) of water in the Gulf of Mexico. The prospect of decommissioning a fixed rig structure in this water depth presented unique challenges, meaning that Claxton was required to develop an innovative solution. Following the pile cutting phase, the jacket would need to be toppled in a highly coordinated operation. Due to the critical path nature of the toppling procedure, the success of the below mudline abrasive cuts was essential, meaning that standard practices of test pulling the piles were not going to be possible for this scope of work.

After almost three years of planning, the project went offshore during June and July 2020.

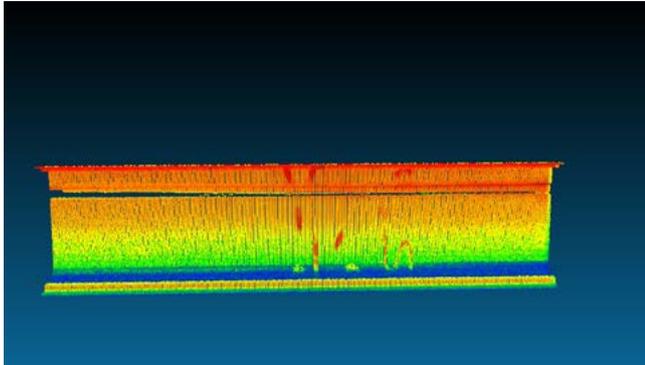


Photo: 3D laser scanned image of the cut line

THE SOLUTION

Over the years, Claxton has conducted extensive trials on numerous cut confirmation methods, ranging from acoustics to vibration monitoring to advanced image processing and the technology used on the project was a culmination of that work. The system consisted of a compact underwater laser scanner, capable of real-time and true scale model generation of the cut line. The cut verification package was integrated with Claxton's field-proven internal pile cutting (IPC) tool, which delivers a focused high-pressure jet of abrasive slurry for severing piles.

Several modifications were made to cope with cutting in 1000 fsw (305m), which was deeper than any previous attempt using abrasives in the Gulf of Mexico. Three test cuts were completed at the Claxton facility as part of a client witnessed Factory Acceptance Test (FAT). Although Claxton could not simulate the effects of cutting at 1000 fsw or below the mudline, the testing proved invaluable in determining optimal parameters for operating through the length of umbilical and validation of the cut verification system.

THE RESULT

Offering a competitive advantage, Claxton was able to confirm the cuts to the satisfaction of the client, without test pulling the piles.

The laser scanner delivered a 3-D point cloud, which was immediately presented to the client as positive verification of the completed cut. The dataset is industry leading in its effectiveness to deliver confirmation of below mudline abrasive cuts and was critical to the success of the decommissioning project.

Cut monitoring systems currently on the market interpret sound or simply monitor by products of the cutting process. Claxton's leading technology stands alone as a true verification system, given its capability to view and physically measure the depth of cut.

Tim Crochet, General Manager, Claxton, said "The requirement for cut verification was identified from the beginning as critical to the success of the project. Because of the resources required to conduct the subsequent toppling operation, a failed cut would have had catastrophic consequences. The cut verification system performed, arguably, the most difficult test on its maiden project; fixed structures in 1000 feet of water are rare. The newly developed system has the potential to become a standard feature of our pile cutting tools, giving Claxton a leading edge in the industry."



* technology is patent pending

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