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PRECISE LIFTING ENABLES SMOOTH REFINERY EXPANSION, USA



Installation of three large pressure vessels was required at a refinery in the Texas panhandle in the USA. This work needed to take place with minimal disruption to the plant's six-figure throughput and while utilising as little space as possible.

The three vessels were received on site by ALE and were each of a different size. The first was approximately 16m in length and 3.65m diameter (52ft 9in x 12ft); the second was 35m in length and 4m diameter (116ft x 13ft); the final vessel was 56m in length and 4.2m diameter (184ft x 14ft).

The smallest vessel was delivered under hook and tandem lifted by two hydraulic cranes with 100t (110 US tons) and 400t (440 US tons) capacities. This operation tailed up the vessel from its delivery trailer and set it on its foundations.

The mid-sized vessel was received by ALE in a laydown yard on site. From here, it was loaded onto SPTs fitted with bolsters and transported to its dress out location, adjacent to where it would be lifted and set in place.

Once dress out was complete the vessel was weighed, establishing its centre of gravity. It was then attached by its skirt ring to an SPMT with a 450t (496 US tons) capacity tailing frame, then tailed to a vertical position and again set on its foundations.

Due to its size and weight, the largest vessel was transloaded onto SPMTs using ALE's 635t (700 US tons) capacity gantry lifting system. It was then transported to the dress out location, where it was rotated 60 degrees, having been shipped out of orientation. This rotation was performed using chain hoists in combination with the above gantry lifting system.

The final vessel was then tailed up in similar fashion, using a tailing frame mounted to an SPMT and a 1,350t (1,488 US tons) capacity crawler crane, with 84m (275ft) main boom configuration and a 560t (617 US tons) counterweight. The radius of all tailing lifts was 38m (125ft).

Equipment used during these lifts included 40 axle lines of SPMT, ALE's Lift 'N' Lock gantry lifting system, 300t (330 US tons) capacity weightors, plus various pieces of staging equipment. The project also utilised LTM 1100 and 1400 mobile cranes and an LR11350 mobile crane.

The project allowed refinery activity to continue during installation. In particular, ALE's custom transportation methodology for the largest of the three vessels ensured installation could take place without shutdown or rerouting of a large pipe rack on site.

The methodology used for all vessels also minimised working at height, as dressing out could take place at ground level prior to lifting. All three vessels will shortly be used to increase petroleum desulphurisation capability at the plant.

ENDS

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ABOUT ALE

ALE has a Smarter, Safer, Stronger solution to any heavy transportation or lifting challenge, no matter how complex.

Our specialised engineering teams, large fleet of innovative equipment and global network of operating centres allow us to bring an intelligent and flexible approach to projects across a wide breadth of industry sectors. This means that clients trust us to help them achieve feats that were once considered impossible, and we have often broken records in doing so.

Developed by our own R&D team, the Innovation Series features world leading lifting and jacking capabilities that have helped to reduce schedule and risk for a range of major projects. This is coupled with an extensive fleet of heavy cranes, specialist transport and

installation equipment that allows us to work Smarter, Safer and Stronger regardless of project size or scope.