

Gulf Coast site uses company's scaffolding innovation

Excel Modular Scaffold

Last year, Excel Modular Scaffold's turnaround team met with a Gulf Coast manufacturing site's planners and coordinators to discuss their upcoming FCC turnaround. One of the site's concerns was the chipping, removal and replacement of the refractory from the cone section of the regeneration unit. Everyone knew the current plan would cause a bottleneck at this area, which would push the schedule out due to the many activities in the cone section.

Excel was able to save 18 duration hours (1.5 shifts) using this application.

With the majority of FCCU/RCCU "head off" turnarounds, the cuts are made at the top tangent line with only the dome and cyclone cluster being lifted off. On this project, the cut was made at the bottom tangent line and the dome with the entire shell to just above the cone section that was going to be lifted off. This meant anything that connected to the regeneration shell — such as pipe, conduit, platforms, etc. — had to be removed. A new shell with cyclones had been prefabricated and was waiting to be lifted in place once the old one had been removed.

Excel's challenge

Everyone felt the bottleneck would happen because of the timeframe of all the work done in the cone section and the time needed to reinstall the new air rings and regeneration unit shell with the new connections, including pipe, conduit, platforms, etc. The original plan had Excel building a scaffold off the cone section, so the refractory contractor could chip off and remove all the refractory from the slope of the cone section. This plan would have taken Excel two shifts: one to fly up the scaffold material in skid pans and build this scaffold, and another shift to bring down and fly down the scaffold material. Also, this would cause a lot of scaffold modifications due to the scaffold being set up on top of the refractory, hindering the removal and reinstallation of refractory.

Excel's solution

The site's planners and coordinators challenged Excel to come up with a plan to erect and bring down a scaffold that would not hinder the work and that would also cut down on the overall duration time inside the turnaround window.

Excel has in-house engineers and its sister company, Deltak Manufacturing Inc., which designs, builds and tests Excel's scaffold material with the latest state-of-the-art equipment. Deltak can also take ideas that

seem impossible in the field and bring them to life. Within a couple of weeks, Excel presented its plan. Excel proposed to build a lifting device that could be attached to a pre-built scaffold on the ground, and everything would be lifted into place inside the cone section by a crane. The lifting device would support the scaffold, keeping it off the refractory in the cone section. The lifting device itself would be supported from the external regeneration structure, transferring the load off the crane.

The site's planners and coordinators gave Excel a greenlight to move forward with its plan. Excel's engineers issued the computer-aided design drawings of the scaffold to be pre-built. The designs showed the elevations of the work platforms and the vertical



lengths to fit into the cone section. In a short while, Deltak had the lifting device fabricated and load-tested. Once the lifting device arrived on the jobsite, a small crew assembled the lifting device and attached it to the pre-built scaffold. All work was done during straight-time hours, which helped to reduce the cost of the project.

Once the regeneration shell and air rings were removed, the crane was attached to the lifting device. Excel lifted, secured and tagged the scaffold for use within six duration hours, saving 18 duration hours (1.5 shifts). When it came time to remove the scaffold, Excel attached the crane to the lifting device and had the scaffold back on the ground and demolished within three duration hours. This saved another nine duration hours (three-quarters of a shift) using this application.



Excel designed the lifting device so the lifting points could be moved and adjusted to fit future lifting applications. The company did not want a "one-and-done" lifting device that would only be cut up for scrap metal once this project was over. With the

center-hub-and-six-spokes design, the lifting device can be shipped inside Excel's normal scaffold rack for easy relocation.

For more information, visit www.excel Scaffold.com or call (877) NO-TOOLS [668-6657].

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