

SYNOPSIS

Faced with a 20% lower production rates caused by tray fouling, the client needed a solution to clean their atmospheric towers *while avoiding shutdown*. Blue Wolf's team deployed our Petro-Jet Lancer technology for a live (no shutdown) cleaning that returned the towers to 100% production.



ONLINE SYSTEM CLEANING REMOVES TRAY FOULING, AVOIDS \$150 MILLION SHUTDOWN & RETURNS COKER TO 100% PRODUCTION

An oil & gas company was faced with a significant reduction in output from their crude towers and coker, observed over the course of two years. During a scheduled turnaround, fouling was observed in the upper distillation trays, causing valve plugs and reduced flow resulting in 20% lower production rates and ongoing lost production issues. However, it would be impossible to clean the trays conventionally, because the cost of shutting down the tower and associated systems in lost production would outweigh the benefits of a thorough tray cleaning.

Fortunately, the company had heard from an Ethylene plant in Houston that a division of Blue Wolf had executed several “live” tower cleanings in their primary fractionator towers, bringing the production back to 100% production levels. The primary fractionator towers are the heart of the plant and one of the most important pieces of equipment and shutting them down for cleaning would be a disaster.

The company reach out to Blue Wolf about deploying the cleaning system previously used in those live fractionators - our proprietary Petro-Jet Lancer- to be able to perform cleaning of their atmospheric towers in the coker unit.

SOLUTION

Blue Wolf’s engineering team provided and delivered a fully engineered service package providing all procedures, safety systems and execution of the “live” cleaning within the shortest possible time. Our project preparation for using the Petro-Jet Lancer (PJL) included::

1. Introducing the Petro-Jet Lancer capabilities to site personnel and inspecting the tower connections and dimensions
2. Generating a 3D CAD model of the atmospheric tower together with the attached Blue Wolf Petro-Jet Lancer technology
3. Holding an all planning meetings at site and choosing cleaning fluid, entry configurations and procedures.
4. Manufacturing and assembling all modifications so that the system can enter through smaller hot-taps.
5. Remotely executing cleaning using the PJL system, controlled via camera system from a Blue Wolf video van



RESULTS

The first project was so successful that company re-used the PJJ system for "live" cleaning of other tower sections in the same plant plus at another plant location in Texas.

Petro-Jet Lancer tower cleaning yields huge customer savings and benefits, including:

Enhanced Safety

Personnel were not directly at the cleaning site when the live cleaning was performed by the robotic system. The procedure was monitored from the air-conditioned Blue Wolf video van so workers were not exposed to both summer heat and heat coming off the in-service tower cleaning process.



No Shutdown Needed

Huge costs savings were achieved by avoiding a complete shutdown of the coker unit, which also saved weeks of manpower and production time and resulted in zero lost production.

100% Clean

Control room data confirmed the trays were 100% clean after the cleaning without shutting down the tower

Transparent Communication with Digital Twin

The engineering team modeled the tower and animated the "live cleaning" before the procedure was performed so that every step could be easily reviewed by plant personnel before-hand.



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