ProDecon® Case Study
UK Refinery

Multi Unit Crude Decontamination

PROJECT HIGHLIGHTS

- MULTIPLE UNIT DECON (CDU, VDU & HTU)
- 18 CIRCUITS COMPLETED
- DECON-88™, DECON-88VP™ & PRO-OX™ UTILISED
- LIQUID AND VAPOUR PHASE APPLICATION
- 0% LEL, 0PPM H_2S, 0PPM BENZENE
- ALL PYROPHORICS ELIMINATED
- IMMEDIATELY READY FOR HOT WORK

THE CHALLENGE

ProDecon was asked to decontaminate multiple units including the Crude Distillation Unit, Vacuum Distillation Unit and the Hydro treating Unit, all to run in parallel. These units were known to have asphaltene and coke deposits that block flow pathways reducing the efficiency of the units. On previous shutdowns these have required intensive mechanical work.

Whilst the work was completed in parallel the decontamination was divided into 18 circuits over 3 units. The scope covered all heaters, columns, strippers and overhead systems.

THE SOLUTION

ProDecon used Decon-88™ which is specially formulated for heavy oils in liquid phase and the Decon-88VP™ in vapour phase. Working together with the Refinery's Operations team, ProDecon designed the decontamination strategy to maximise the effectiveness of our chemistry to minimise the schedule. Utilising our large fleet of decontamination equipment and personnel, the team operated 4 specialised circulation units and 10 injection pumps to ensure chemical distribution was optimised.

Circulating the heavy circuits in liquid phase maximised the removal of heavy fouling and sludges. Vapour phase chemical injection into the steam flow decontaminated the lighter hydrocarbons and provided for good chemical contact through the packed beds. Oxidation using our Pro-Ox™ chemistry ensured all pyrophoric material was treated.

On site testing throughout the process confirmed the end point with 0% LEL, 0 H2S and pyrophorics neutralised. The work was performed safely and efficiently and on schedule allowing for rapid man entry and maintenance works. ProDecon's environmentally friendly, biodegradable chemistry, allowed for the resultant effluent to be treated through the site waste water system with no off site disposal requirement.

THE RESULTS

ProDecon successfully completed this project within the planned schedule. Sampling and testing proved the efficiency of decontamination and pyrophoric neutralisation. The manways were opened to allow safe man entry. There was no odour or complaints regarding irritation from those working inside the vessel. There were no issues with interference to sampling / monitoring equipment, which could cause vessel entry delays.

The cleanliness of the vessels' internals was reported to be very good. Post decontamination mechanical work was minimised, and the maintenance cost was reduced. Time-saving benefits for the refinery were realised from planning through to execution being able to deal with a single contractor capable of simultaneous decontamination on 3 systems.

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