

CHEMICAL DECONTAMINATION OF LARGEST ROGC IN THE WORLD



PROJECT

A major refinery in India turned to ZymeFlow for their first Chemical Decontamination for the turnaround of their Refinery Off-Gas Cracker (ROGC) unit. This is the largest ROGC complex in the world. The customer was under a time constraint due to critical path equipment for maintenance and wanted a shorter decontamination timeframe to optimize the overall TA schedule.

CHALLENGE

Due to the scale and complexity of the ROGC complex and quench system loop, time was a concern to handover the system safely for maintenance. The quench tower is approximately 40 meters high and 8.3 meters wide with multiple associated equipment units, not exceeding the total time allotted for the turnaround was critical. This would be difficult given the overall size of the units. Past site decontamination experience was predominantly circulation which is challenging for a system of this size in both execution and duration.

In addition, this was the first major shutdown on the unit and the customer wanted to leverage on the extensive global steam cracker complex decontamination experience of ZymeFlow to help with the planning and decontamination strategy.

ENGINEERED SOLUTION

ZymeFlow's experienced planners reviewed the system extensively and used our global experience to develop the decontamination plan, which utilized ZymeFlow UN657 applied in true Vapour-Phase to decontaminate the ROGC complex. Due to ZymeFlow's unique properties during Vapour-Phase, we are able to distribute the chemistry effectively across the entire major system, allowing us to decontaminate the system efficiently.

This has also allowed us to optimize on chemistry injection where we are able to utilize only two steam injection points for the complex. This was beneficial as it reduced the mechanical needs and equipment that had to be brought into the space.

To target heavy sludge, our planners also incorporated a boil-out applications utilizing our Rezyd-X solvent chemistry to fluidize sludge present high sludge potential equipment such as oil-water separator.

AT A GLANCE

- Largest ROGC complex in the world
- First major shutdown
- After decon:

0 LELs
ppm H₂S
ppm Benzene

RESULTS

The overall chemical decontamination was a success where LEL was eliminated to 0%, H₂S to 0 ppm and Benzene to 0 ppm in a safe and fast manner. The decontamination portion of the turnaround timeframe was shortened, mechanical cleaning was greatly minimized and there were no pyrophoric events. The entire ROGC complex, including all units and the quench water loop were decontaminated on schedule and using only 2 steam injection points. Thus, reducing the equipment footprint. In the end, the clients were happy with ZymeFlow's planning and expertise as well as the execution of the project which we have set the benchmark for decontamination.