

The Challenge

A 500k+ BPD US refiner selected Refined Technologies, Inc. (RTI) to provide a chemical cleaning plan and execution for a 100k BPD vacuum pipestill in support of a major turnaround. The refinery also required an effluent management and vapor control plan, along with the associated equipment. Multiple contractor interfaces, safety, and project execution risks were identified as major project concerns.

The Solution

To address the challenge, RTI's experienced team combined Strategic Chemistry with Strategic Services. An effluent drain and vapor control system was developed using a thorough cleaning plan and detailed mechanical needs list. RTI provided the effluent drain and vapor control temporary piping system, the drain manifold trees, and the main trunk hoses to support the entire cleaning effort. The temporary piping system consisted of three independent headers, two for drains and one for vapor control.

RTI's plan made use of the client's existing inventory of steam hoses, chemical injection hoses, and drain hoses in order to minimize economic impact to the Client. RTI remained ready to supplement any further hose requirements from their in-house rental inventory.

In order to reduce effluent temperatures, the drain header was connected by 6" hoses to RTI's 1,500 ft² heat exchangers. Downstream of the heat exchangers, 4" hoses were used to route effluent to the pump skids for transfer to the refinery slop system or the vapor recovery system blow down drum.

Overhead tower vapors were routed through RTI heat exchangers to remove condensables. To minimize flare load and prevent any atmospheric release, a vapor scrubbing solution was used on the remaining non-condensables. The vapor scrubbing solution removed H₂S and VOCs with equipment and processes fully integrated into the RTI plan.

Project Statistics

800 - Linear feet of temporary piping

34 - Drain Manifolds (trees)

272 - 3/4" Drain Hose connections

42 - 2" & 4" Drain connections

70 - 4" and 6" Hoses

2 Pump skids / **2** Heat Exchangers

Vapor Recovery System / Frac Tank Scrubbing

The Results

RTI combined the detailed chemical cleaning plan with an effective effluent and vapor control solution along with the proper mechanical equipment to deliver a successful shutdown 2.5 days ahead of schedule with no safety issues. RTI Operations Managers provided oversight to eliminate the need for multiple contractors. The refinery turnaround team focused their efforts on managing the turnaround instead of managing contractors. The overall project was a success.

For more information on how Refined Technologies can add Strategic Services to Strategic Chemistry for your next project, go to www.r-t-i.com.

