Petrochemical Production Facility
High-Efficiency Coalescing – CECO Peerless

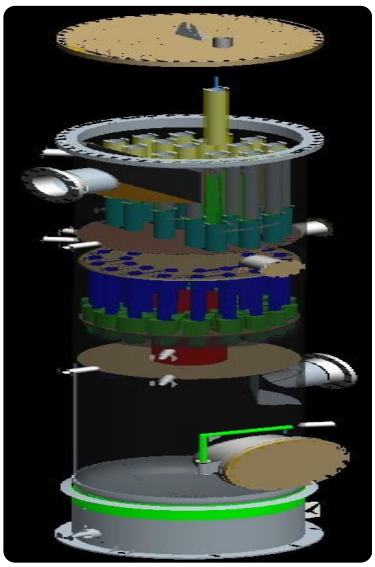
CASE STUDY

INDUSTRY: Petrochemical Production

LOCATION: Texas Gulf Coast

YEAR BUILT: 2015 & 2019

PROJECT DESCRIPTION: Multi-Cyclone and coalescing filter system with removable vessel section for reduced downtime.



CECO Peerless

The Challenge

A petrochemical producer was experiencing a buildup of sticky residue on its fuel gas burner tips because of fine aerosol contaminants and intermittent liquid slugs during the production process. Over time, this buildup would negatively impact production efficiency and require the line to be shut down for the filtration system and fuel gas burner tips to be maintained and cleaned.

Due to the high value nature of the customer's product, the frequent system shutdowns that were required cost this company thousands of dollars in lost production.

The Solution

The CECO team of experts designed a filtration system that helped reduce residue build-up and provide a more cost-effective maintenance process.

- A multi-stage approach, combining slug-catching multi-cyclones followed by high-efficiency coalescing filter elements proved to be the ideal solution for this filtration challenge.
- Incorporating a removable central vessel section reduced downtime during plant outages.
- CECO Peerless performed computational fluid dynamics (CFD) analysis during the design phase to visualize gas flow patterns and assure the customer that the multi-stage separation approach was optimized before construction.
- The primary stage cyclones reduced solids loading on the coalescing filter elements, extending the operating time between filter changes.

The Results

- Value 1: High-efficiency coalescer to protect fuel gas burner from contamination
- Value 2: Extended coalescer element life by using primary stage multi-cyclones to remove sticky solids
- Value 3: Fully bolted vessel section to allow 2nd cyclone bundle to be put into service while 1st cyclone bundle is cleaned “offline”

For more information, please visit:
https://www.cecoenviro.com/absolute-coalescing-separators-peerless/