Case Study

Horizontal Enclosed Flare Successfully Abates Hydrocarbons for Recycling Facility

The Issue

A large recycling facility in eastern North Carolina wanted to consolidate the waste streams of nine (9) Phase Separation System reactors into one (1) thermal oxidizer for hydrocarbon abatement. The ensuing abatement system needed to operate in a fully automated manner while providing a 99% (or greater) total hydrocarbon and non-methane hydrocarbon destruction rate. The system's uptime and need for low maintenance were crucial for allowing continuous on-stream operational service. The customer also specified that a cost-effective system design, minimal operator interface and meeting stringent safety requirements were also very important criteria to consider when selecting an air pollution control technology.

The Solution

The engineering design team at Pollution Systems thoroughly reviewed the facility's process application and recommended the installation of an Enclosed Flare. Enclosed Flares are proven technologies for oxidizing various pollutants such as VOCs and hydrocarbons. These systems operate over a large process window and can safely handle fluctuations in waste stream flowrates and compositions while providing simple and reliable operation.

The Deciding Factor

Pollution Systems designed an Enclosed Flare Model #CEF-18 system that was appropriately sized to accommodate the plant's waste gas stream and to meet or exceed a +99% or higher total hydrocarbon and non-methane hydrocarbon destruction rate. The system was fully automated for ease of startup and operation. Since this particular facility wanted a system with little downtime, Pollution Systems built the Enclosed Flare as a horizontal system which provided easy accessibility and thus shortened the time needed for maintenance performance.

The Final Result

Pollution Systems completed the Horizontal Enclosed Flare System within the expected time frame and within budget. The Enclosed Flare successfully abated the hydrocarbon and non-methane VOCs from the nine (9) waste streams sent to the flare for treatment. Overall, the customer was very happy with the cost, ease of operation, safety and >+99% DRE of the system. Since completion of this project, they have contacted Pollution Systems about building two more Enclosed Flare Systems to handle their plant's future site expansion and anticipated increase in production capacity.

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