CASE STUDY

VAPOR CONTROL GLOBAL®

MAIN FLARE SHUTDOWN
WITH GVC'S FLAREFREE® TURNAROUND SERVICE

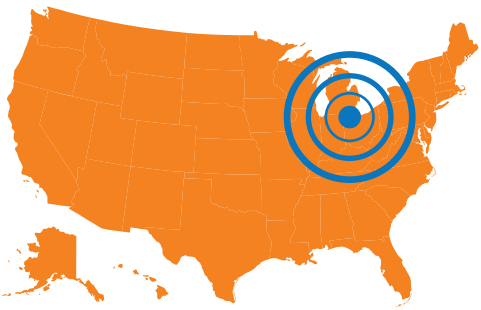
Project
In a recent job, the Global Vapor Control (GVC) team traveled to an Ohio refinery to assist with a plant wide turnaround that included taking down a main flare. The refinery was preparing for a two phase project and needed to control propane and butane gasses while personnel performed maintenance and repairs. The plant required a more efficient and safer solution than temporary flares. GVC approached the refinery with the FlareFree® Turnaround service which would achieve the safety and efficiency goals while better helping the plant comply with environmental regulations.

Past Procedure
In previous turnarounds the refinery had relied on temporary flares to keep the pressure in the system under five psi. Several temporary flares were needed to maintain the required pressure. The low height of the flares caused safety hazards for the plant's personnel and prompted complaints from the local community about large amounts of light, smoke, and noise.

Challenges
The company had originally planned to vapor control only the closed system tank farm, about 50 psi, for phase one. After GVC arrived onsite, the two parties realized that the thermal oxidizers would need to manage the pressure of the entire propane tank farm system including the pipeline system back into the refinery. With large amounts of product still in the system pipeline, the pressure reached 100 psi, twice that of the original estimate.

Engineered Solution
The Global Vapor Control team conducted a two phase project which utilized two 8 million BTU thermal oxidizers. During phase one, GVC de-inventoried the tank farm including 24 underground propane tanks and four above ground propane tanks. The team positioned one thermal oxidizer on each end of the system to pull vent vapors from the propane tank farm system. While GVC kept the psi under five, refinery personnel were able to perform maintenance. During the second phase, the two thermal oxidizers were attached to four sphere tanks and four bullet tanks. The primary concern was a potential pressure build up in the main flare system. To maintain a safe working environment for refinery personnel, GVC managed the pressure in the system while maintenance was performed on the main flare. The client soon realized that its system was not connected in conjunction to the flare so the GVC team modified its plan to control the pressure on two different systems instead of one.

Results
With the two thermal oxidizers, the Global Vapor Control team kept the psi levels below five while the refinery personnel completed the turnaround process. The thermal oxidizers performed at a 99.9% VOC destruction efficiency, outperforming a temporary flare in helping the refinery meet its environmental regulations. The FlareFree Turnaround solution proved a safer alternative to the temporary flares and the outlying community benefited from decreased noise, light, and smoke from temporary flares.



5 The thermal oxidizers kept the pressure below five psi

0 There were no complaints about light, smoke, or noise

2 The GVC team utilized two thermal oxidizers

100 GVC managed a pressure of 100 psi in the tank farm system

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