



A CASE STUDY IN ENGINEERING, EXPERIENCE, AND EXPERTISE

Pipeline Blowdown: Expedited Solution

SITUATION

In June 2018, a midstream company in Denver, CO needed to replace 17.82 miles of a 36" natural gas pipeline that could only be offline for a maximum of 48 hours. Before replacement work could begin, the company needed to blowdown/flare approximately 32 MM ft³ of natural gas inside the line. To complete all necessary work within a tight timeframe, the company required a flaring solution that could clear the pipeline of gas in less than eight hours.

CHALLENGE

The midstream company called on the Pipeline Services Division at Zeeco World Headquarters to engineer, deliver, and install the best available solution for their project. Under immense deadline pressure and in close proximity to an airbase, the customer needed a simple, low profile solution that could easily and safely manage flow rates of more than 67,000 SCFM. In addition, the solution needed to allow operators to throttle the flow of natural gas, mitigate noise levels, and limit radiation exposure for personnel, equipment, and the existing facility.

SOLUTION

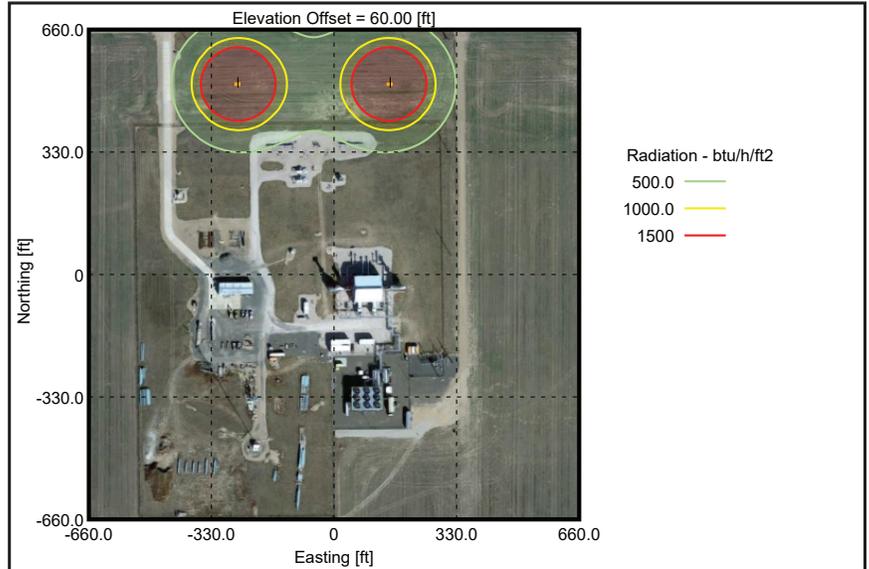
After analyzing the scenario and needs of the customer, Zeeco determined that two flares were necessary to clear the line in the time allotted. To begin, Zeeco's Pipeline Service team conducted a detailed analysis of the possible noise and radiation levels for deploying two trailer-mounted flares operating at a maximum capacity of 33,550 SCFM during normal field conditions. Zeeco's data identified northing offset by 518 ft. at 60 ft. of elevation as the optimal location for the flare set up to mitigate the effect of noise and radiation on flaring performance, existing equipment, and the surrounding environment. Zeeco then calculated blowdown time against volume/pressure to verify the proposed solution's ability to blowdown the entire pipeline in less than eight hours.

RESULTS

Zeeco's Pipeline Services Division delivered two 60' tall trailer-mounted utility flares to achieve 33,550 SCFM, each with interconnected piping and valves, as well as a custom piping spool to throttle gas flow. Zeeco then operated the equipment for approximately six hours in the designated safety locations to achieve a successful blowdown of the entire pipeline. Zeeco's expedited blowdown allowed the midstream company to begin replacing the pipeline two hours ahead of schedule.



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Combustion Noise Level 0 ft Above Grade Versus Distance from Stack Base
 Temperature (deg F) = 70 , Relative Humidity (%) = 70

