Factors Impacting Atmospheric Discharges and Selection of Pressure Protection Disposal Systems

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ABSTRACT

Discharging highly hazardous chemicals (HHC) to the atmosphere remains a major challenge for refineries with atmospheric pressure protection and blowdown systems. The significance of discharging HHC to the atmosphere is determined based on key factors including, but not limited to, chemicals type, concentration, discharging phase, location, and operating procedures.

In recent years, several fatal incidents have proven the need to eliminate HHC disposal to the atmosphere and that other means of safe disposal systems should be evaluated. The evaluation of other safe disposal systems should be based on good engineering understanding of the nature of the challenge. Therefore, potential scenarios, including human error that may result in system overpressure and atmospheric discharge should be identified.

In this presentation, a decision-making approach to determine safe disposal system based on combined understanding of atmospheric discharge impact and possible alternative discharge locations will be discussed. This approach provides process operators and managers with a tool that layout an engineered path that leads to a recommended discharge location. The need to evaluate the existing disposal system may be deemed necessary as a result of applying this approach.