

Flare Gas Monitoring System per 40CFR60 Subpart Ja



While traditional post combustion CEMS methods per 40 CFR 60 will generally apply to the affected areas, the flare will be monitored prior to combustion requiring a more complex analyzer such as Gas Chromatograph.

"Flare" means an open-flame fuel gas combustion device used for burning off unwanted gas or flammable gas and liquids. The flare includes the foundation, flare tip, structural support, burner, igniter, flare controls including air injection or steam injection systems, flame arrestors, knockout pots, piping and header systems.

"Reduced Sulfur compounds" means hydrogen sulfide (H₂S), carbonyl sulfide (COS), and carbon disulfide (CS₂).

"Total Reduced Sulfur Compounds" is the total number represented by only H₂S, COS and CS₂.

"BTU" is the total calculated number defined by measuring all stream components contributing to the heating value plus their specific gravity.

"Mass Flow Rate" is the mass of substance which passes through a given surface per unit time.

TRS (COS, CS₂, H₂S), High Range TRS or H₂S, BTU, Mass Flow are the many required complex measurements made by the system. Requiring critical design and expertise in sample extraction, transport, conditioning, analysis, validation/calibration and communications are key designs to ensure proper reporting to meet Subpart Ja compliance.

Safety is paramount in designing the Flare Gas Monitoring System. Since sample and calibrations standard will contain H₂S/Combustible vapors. The Sample Conditioning System should be mounted in a heated enclosure and affixed to the outside wall of the shelter since all valve switching, filtering, and flow control could create multiple leak paths; isolating them from the inside of the shelter. Calibration Gas Cylinders, including flammable and toxic gases (H₂S), should be mounted external to the shelter and not inside an enclosure or shelter. Ambient air monitors, as a minimum, should be mounted internal to the shelter including O₂ oxygen deficiency, H₂S, LEL. Sample bypass cannot be vented to the atmosphere due to flammable and potentially toxic gases, and therefore should be sent back to the flare line. A walk-in type-shelter with proper safety-designs not a free standing enclosure should be considered. The amount of free space required around the analyzer could be considered a confined space.

Applied Controls Analytical Systems Integration can provide a **Complete, Turnkey Package**, from the sample probe, sample transport, sample conditioning, analyzer, flow monitor, shelter, HVAC, power distribution to input output communications. We will design, engineer, build start-up, commission and train your staff.



Please contact Applied Controls to discuss your specific requirements