Gas Detection in Refineries

Within refineries, there are many processes and special production units that create specific safety hazards for both the environment and working personnel. These include crude desalting, thermal cracking, catalytic dust, hydrogen generation, hydrogen sulfide, isomerization and sweetening.

- ***Crude desalting*** – During this process, a fire can occur due to a leak or release of crude from heaters (an ignition source) in the crude desalting unit. This process could also produce wastewater streams which contain dissolved gases at lethal concentrations.

- ***Thermal cracking, coking & catalytic cracking*** – These are closed processes with the potential for fire coming from liquid, gas or vapor leaks that come in contact with an ignition source.

- ***Catalytic dust*** – Explosive concentrations of catalytic dust can accumulate during its recharge or disposal. The handling of coked catalyst creates the possibility for iron sulfide fires, which can occur when it ignites spontaneously in the air.

- ***Hydrogen generation*** – Hydrogen generation is required to provide for a continuous supply. This creates a hazard in the event of a leak or accidental release of gases.

- ***Hydrogen sulfide*** – The H_2S content of the feedstock must be continuously monitored to prevent personnel exposure to toxic concentrations, reduce corrosion, and prevent environmental pollution.

- ***Isomerization*** – These processes convert n-butane, n-pentane and n-hexane into their respective isoparaffins of substantially higher octane number. During this process, leaks can come into contact with an ignition source.

- ***Sweetening*** – Oxygen is used in the sweetening process. If too much enters these processes, it is possible for a fire to ignite in the settler due to the generation of static electricity.

Otis Instruments offers a variety of wired and WireFree easy-to-use, robust and configurable gas detectors capable of detecting toxic and combustible gases for diverse applications within refineries.

To learn more about our gas detection solutions for refineries, contact Otis Instruments today.