

Effect of Composition Fuel on Safety of Combustion Process

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Abstract : Fuel gas used in the burner receives as contributors other gases from different processes and this result in variability in the composition, which may cause an incomplete combustion. The burners are designed to operate in a certain curve, the calorific power dependent on the pressure and gas burners. When deviation of propane and C5+ is huge, there is a large release of energy, which causes it to work out the curves of the burners, because less pressure is required to force curve into operation. That increases the risk of explosion in an oven, besides of a higher environmental impact. There should be flame detection systems, and instrumentation equipment, such as local pressure gauges located at the entrance of the gas burners, to permit verification by the operator. Additionally, distributed control systems must be configured with different combustion instruments associated with respective alarms, as well as its operational windows, and windows control guidelines of integrity, leaving the design information of this equipment. Therefore, it is desirable to analyze when a plant is taken out of service and make good operational analysis to determine the impact of changes in fuel gas streams contributors, by varying the calorific power. Hence, poor combustion is one of the cause instability in the flame of the burner and having a great impact on process safety, the integrity of individuals and teams and environment.

Keywords : combustion process, fuel composition, safety, fuel gas

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