

# Pall SepraSol® Plus coalescer helps a refinery improve safety and combustion efficiency of its fuel gas furnaces



## CASE STUDY

PICSSPPT4EN

### Background

Refineries are by definition a very complex industrial sector where HSEMS (Health, Safety and Environmental Management System) are vital. They define the principles by which operations are conducted and control the risks throughout the processing lines. Their challenge is to combine both operation performance and safety while in the past decade, the 'Zero Accident' culture has incorporated the environment and in particular, the level of CO2 emissions into the atmosphere.

### Introduction

The industry's adoption of more stringent restrictions concerning environmental safety does not always mean increased costs in the medium to long term. It can even provide a short-term opportunity for improving the overall efficiency of a process, as demonstrated in a refinery operating in Southern Europe.

An automatic gas flow control valve installed upstream the furnace was not operating well due to a very high level of solid and liquid contamination damaging the gas injection nozzles. This situation was impacting the reliability, performance, and safety of the entire process.

### Problem

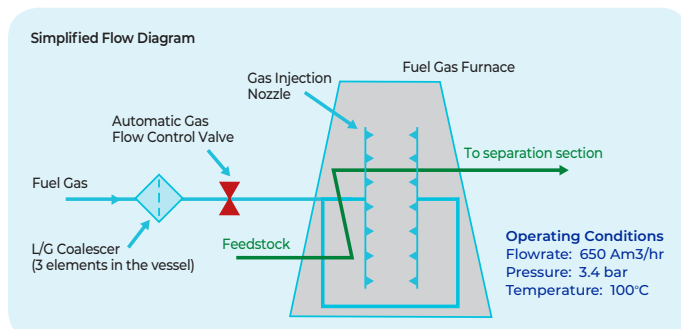
The on-site Process Engineering team identified contamination as the root-cause of the mechanical issues the flow control valve was facing. Thus, they proposed to install a filter to remove particulate from the fuel gas stream with a view to increase the energy-efficiency of the furnaces of their reformer unit.

Pall recommended the installation of a liquid/gas coalescer based on 20+ year proven experience in this application, highlighting that it is common to find not only solid but also liquid contamination in fuel gas streams, such as traces of amine and water, free hydrocarbon, etc.

To validate the liquid/gas coalescer solution, the customer agreed to install a rental skid on its processing lines. This solution was also the most flexible and timely solution to implement corrective actions on the fuel gas stream.

### Pall solution

The rental skid, a single-stage SepraSol Plus liquid/gas coalescer assembly, was installed in the fuel gas line, close to the automatic control valve, commissioned, and fully operational within 2 weeks.



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## Results

After 3 months service the coalescer was reported to be running without any issue and no further maintenance operations have been reported on the fuel gas control valve. The gas furnace is also now able to operate at full capacity.



## Conclusion

The rental skid fitted with Pall SepraSol™ Plus coalescers, enabled the refinery to significantly improve the reliability of the fuel gas control valve regulating the flowrate at the inlet of the furnace.

The installation of this skid not only reduces the cost of recurrent maintenance operations (dividing the OPEX budget of gas injection nozzles by two), but also increases the reliability, safety, and combustion efficiency of the furnace and provides added protection for downstream equipment.

Additionally, it helps the refinery to reduce its CO2 emissions, contributing to the global effort to combat climate change.

As a result, the customer is planning to install a permanent solution and apply the same in another Fuel Gas line feeding the furnaces of a hydrodesulfurization unit.



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PICSSPPT4EN  
June 2023