PALL LIQUID/GAS COALESCER APPLICATIONS

Protection of Burners and Combustion Equipment

PROBLEMS

Fuel gas in a refinery or a gas plant is a mixture of off-gases from processes in the plant. Since these processes are vulnerable to upset conditions, the composition of the fuel gas is frequently changing. Fuel gas can contain high concentrations of condensable hydrocarbons and carried over amine. These liquids are in a fine aerosol form and very difficult to separate with knock-out drums or packed vessels. As liquids and solids enter combustion equipment, they foul burner nozzles and combustors. This results in frequent maintenance and replacement of the burners, poor burner efficiency and increased fuel gas consumption. Plugged nozzles can change the flame pattern in the combustion equipment resulting in catastrophic damage. Burners should operate for up to a year before seeing any signs of nozzle plugging. If plugging and regular maintenance occurs more frequently, the fuel gas contains too many liquid and solid contaminants which should be removed.

PALL SOLUTION

A Pall SepraSol™ Liquid/Gas coalescer in the fuel gas line will remove virtually all of the entrained liquids in the fuel gas. SepraSol coalescers remove hydrocarbons, amine, or caustic aerosols as small as 0.1 micron. Most aerosols smaller than 5 micron are not separated in knock-out drums or packed vessels.

All of Pall's SepraSol coalescer products contain a patented oleophobic/hydrophobic treatment which allows the coalescer to recover quickly and capture more efficiently slugs of liquid that result from the upset conditions that frequently occur in fuel gas systems. These treated coalescers are particularly beneficial in fuel gas systems which are operating in petroleum refineries and gas processing plants.

Figure 1: Process Heater/Furnace

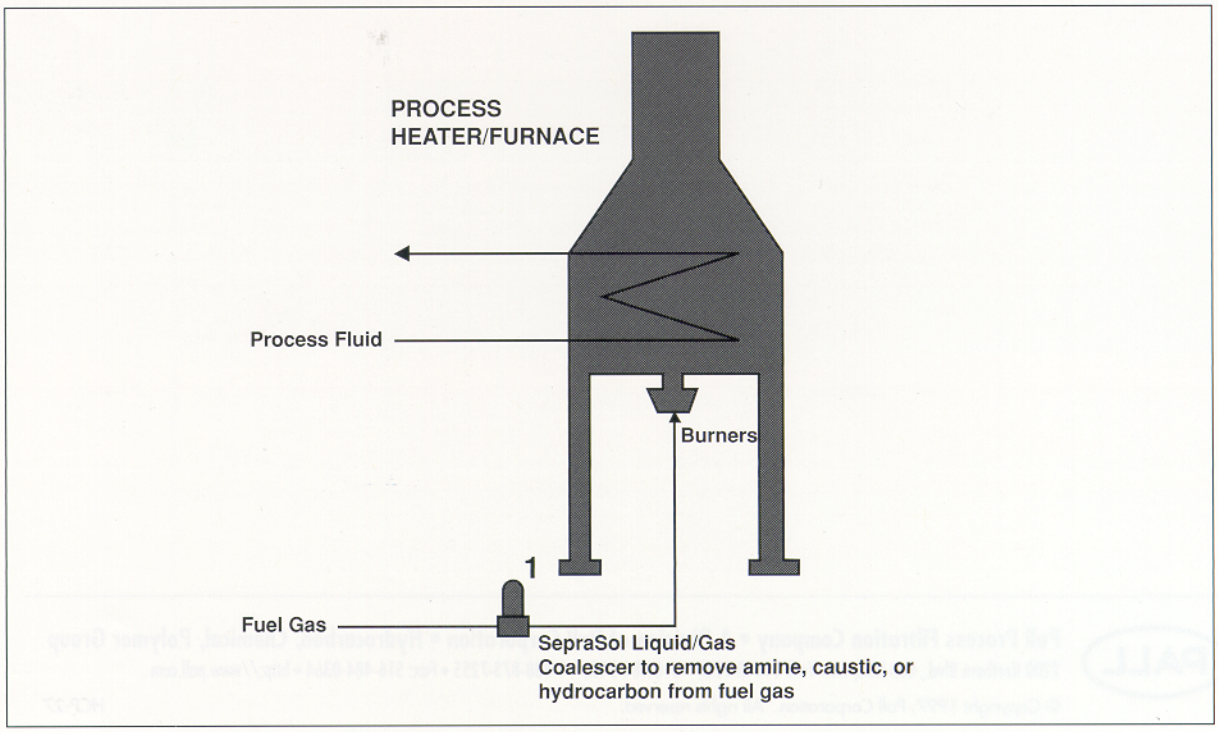

Table 1. Filter Recommendations

Filter Location	Recommended Pall Assembly	Purpose of Separation	Benefits of Separation
1	Pall SepraSol Liquid/Gas Coalescer CS604LGH13 CC3LGO2H13 CC3LGA7H13 CC3LGB7H13– for amine	Remove condensable hydrocarbon, amine, or caustic from fuel gas	• Longer service life of burners • Improved combustor or furnace efficiency and operations • Improved reliability • Lower maintenance cost

OTHER APPLICATIONS

Natural gas turbines– combustor protection
protection of gas fired boilers

REFERENCES

GAS 4102 – SepraSol Liquid/Gas Coalescer

GAS 4104 – SepraSol Liquid/Gas Coalescer-(Double Open Ended Style)

H-52 – SepraSol Plus Liquid/Gas Coalescer

PR-900 – Separations Technologies in Petroleum Refining

GAS-4501 – Operations and Installation Guide to SepraSol Coalescer Assemblies

PALL

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2200 Northern Blvd., East Hills, New York 11548-1289 • 516-484-5400 • 1-888-873-7255 • Fax: 516-484-0364 • http://www.pall.com