

Abstract – “Reducing Fired Heater CO2 Emissions and Fuel Consumption”

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Introduction

Convection section heater fouling is responsible for millions of dollars in lost revenue every year for refineries across the world. Fired heaters consume expensive fuel to provide heat energy for the processes; if a fired heater is even one or two percent inefficient it can consume an additional million dollars in fuel over the course of a year.

Addressing the Issue of Fouling

Fouling-related instabilities have a vast negative impact on performance, revenues, and CO2 emissions. With increasing pressure on operators to improve yields whilst significantly reducing emissions, Tube Tech International (TTIL) has invested substantially in research and development to develop and deliver the petrochemical industry’s most significant step-change in removing fouling from the external surface of convection sections.

The latest equipment update was launched in 2021; TTIL has developed a unique Rover and flushing convection section cleaning system which is able to clean ninety-five percent of the surface area of the asset, regardless of fouling. This is a dramatic increase in performance compared to traditional cleaning methods, which can only reach, at best, fifteen percent of the surface area. This next-generation solution will positively impact the future for the refining and petrochemical sector, its stakeholders and the environment.

Also, launching soon is Shell Side Jet™; the first ever guaranteed technology to remove fouling between the tubes on the shell side of shell and tube heat exchangers. These technological advancements are improving the future of the industry by focusing on safety and restoring productivity whilst being environmentally conscious.

Conclusion

As well as convection bank cleaning solutions, Tube Tech has a strong reputation for delivering unrivalled cleaning standards on Texas Towers, air cooled condensers, fin fans, heat exchangers and many more critical plant assets. Innovation is at the heart of the company and this has resulted in an array of other unique solutions which aim to reduce CO₂, increase performance and generate an impressive return on investment, all whilst ensuring operator safety.

This presentation will explore the business, socio-economic and logistical challenges faced by operators, and how innovative fouling removal solutions have been developed to meet every challenge from operational and economic benefits to operator safety, water usage and carbon footprint, and how investment in innovation will positively impact the industry.