MEDIA REPLACEMENT

MEDIA CHANGE RESTORES PLANT CAPACITY & IMPROVES FLOW

OPERATING ISSUE

A recycling facility that processes waste bakery products experienced significant reductions in air flow capacity, negatively impacting production rates. The bottle neck was a two-chamber RTO (Regenerative Thermal Oxidizer) system that took forever to start, suffered significant chamber temperature imbalances and contained ineffective ceramic media. Factors that caused the media beds to clog were particulate load in the airstream, unfit ceramic media selection, and the original installation arrangement of media. The original media used in the RTO was a combination of Lantec's MLM structured media and random ceramic saddles. A layer of random saddles was placed at the bottom of the chamber (cold face), followed by five feet of the MLM structured media and finished with a top layer of random saddles. Multiple bake-outs and even pressurized-water washes of the media beds did not alleviate the pressure drop issues.

PROJECT SOLUTION

Structured media are designed to handle high performance and low pressure drops. However, introducing random saddles on the cold face subjected the incoming air stream to a high pressure drop layer before it interacted with the structured media. The impact of this random layer on the bottom is more severe than the layer at the top because the cold face is the lowest temperature-region of the media chamber bed, and is where most of the condensation and particulate clogging occurs. It is also the most difficult area to bake-out and clean. The top layer of random saddles is located near the very hot combustion chamber and therefore doesn't elicit the same concern. Our field service technicians resolved the air flow capacity issue by eliminating the bottom layer of random saddles and implementing five feet of a new highgrade structured media directly on the cold face. This new media has larger void openings and is more resistant to clogging. Upon removal of the media, shards of the fractured MLM media were

CUSTOMER BENEFIT

Previously, the original RTO manufacturer had communicated that the 20-hour start-up time was due to a limitation of the unit burner. Our field service techs reviewed the current start-up procedure, made quick adjustments to some process parameters and controls, and the RTO came up to temperature within three hours.

Aside from this major improvement, we worked around the clock in 12-hour shifts for the media removal and replacement to minimize downtime. Air flow through the RTO no longer hinders the upstream manufacturing process, and the system has not displayed any of the other issues since this work was conducted.

ABOUT POLSYS SERVICES

Headquartered in Houston, TX, PolSys Services is the leading provider of onsite technical services for all makes and models of air pollution control equipment, including oxidizers, scrubbers, and burners/gas trains. Our field service technicians have the specialized knowledge to resolve any issue, from annual safety inspections to extensive retrofits and ceramic media replacements. Whether it's a visit for an emergency shutdown or planned repair, projects are completed on time, on budget, and with unmatched safety and reliability.

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