CASE STUDY

No Downtime, Minimal Energy Costs for RTO at Window & Door Manufacturing Facility

CECO ENVIRONMENTAL

CASE STUDY: **Window and Door Manufacturer**

LOCATION: Seattle, WA

SOLUTION DATE: In service since 2004

THE CHALLENGE: Faced with growing business and high demand for its products, a Seattle-area manufacturer of windows and doors required abatement of styrene and alcohol volatile organic compounds (VOCs) from its vinyl pultrusion and coating operations in order to maintain compliance with clean air standards. However, with lean manufacturing and finishing operations in place – and, therefore, less engineering and maintenance staff, the manufacturer required its VOC abatement technology to be reliable and simple to maintain to ensure maximum productivity.

THE SOLUTION: With a proven track record for low maintenance and compliance in difficult finishing environments, CECO Environmental's dual-chamber regenerative thermal oxidizer (RTO) system (22,500 scfm) was selected for this facility. Several vinyl coating lines are exhausted into a common duct header that leads into the RTO system. An integral AC variable-speed drive with inlet pressure control provides automatic RTO system operation from a maximum 22,500 scfm flow down to a minimum 5,500 scfm process flow rate. The system's "bakeout" feature routinely volatizes any styrene polymers that may condense.

CECO Environmental's dual-chamber RTO has experienced virtually zero downtime, and system energy costs are minimal due to the efficient 95% primary heat recovery effectiveness of the low-pressure random packing ceramic media heat exchanger.

THE RESULTS: Despite a rapid 12-week shipment cycle and two-week or shorter installation schedule to ensure the facility could continue to meet production goals, the RTO system was installed in less than three days, resulting in minimal downtime for installation and balancing. The system provides greater than 99% VOC control of styrene and alcohol hazardous air pollutants (HAPs).

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