

## CEE Uses New Regenerative Oxidizer Technology To Replace Older Catalytic Oxidizer With Additional Heat Recovery

Controlled Environment Equipment was called in by a Metal Coating Facility in the Midwest to review an existing installation that was not meeting their current requirements for VOC Control. After reviewing the facility requirements, CEE proposed a system that would replace a catalytic oxidizer (that was undersized) with a Two Bed Regenerative Oxidizer along with two waste heat glycol systems to supply make up air to the facility.

The total exhaust flow to the New Regenerative Oxidizer was 45,000scfm and because the quantity VOC's (approximately 4% LEL) the Regenerative Oxidizer would run at full flow without using any natural gas. This saved the company \$150,000 for a new catalyst section as well as saving them \$360,000 per year in auxiliary fuel costs.

The system produced waste heat sufficient to operate two 50,000 scfm make up air units that preheated the exhaust air to the building. A glycol coil system was used due to the distance that the make up air units were from the New Oxidizer. And there was sufficient heat recovered to run the 2- 50,000 scfm make up air units without using auxiliary fuel. This saved the customer an additional \$264,000 per year in operating costs.



While meeting the customers air pollution control requirement, the system saved them \$774,000 the first year of operation. Needless to say, this customer was very pleased with their new system; it cleaned the outside air, it cleaned the inside air, and saved them ¾ of a million dollars in the process.

In Addition to dollar savings to the customer, this Regenerative Oxidizer System with Secondary Heat Recovery is considered to be:

### Environmentally “Green” System

- 1) Since the Oxidizer uses natural gas injection, it does not produce NOx.
- 2) Since the VOC's (volatile organic compounds) release heat, there is no requirement for auxiliary fuel (such as natural gas) needed to destroy the air pollutants.
- 3) The most significant “Green” item is the fact that we are using the heat that is produced, twice: once to destroy the pollutants, and once to heat the building. The secondary heat recovery system supplying the make-up air heaters are saving on average 4,000,000 btu's/hr. This converts to **saving 1,870,000 pounds of CO<sub>2</sub> production per year**. And reducing CO<sub>2</sub> production helps reduce “the green house effect” and reduces Global Warming.

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