Maintenance Solutions For Air Pollution Control Equipment

Catalytic Products International

Manufacturing facilities are constantly under pressure to meet production forecasts at the lowest possible cost. These two goals: production output and cost control, can be difficult to obtain consistently in any manufacturing operation.

Additional frustration to meet these goals can be exaggerated in today's Lean manufacturing climates that have trimmed budgets and reduced workforce. Further complicating any plant manager's responsibilities are EPA compliance requirements and working within the demands of EPA operating permits.

To make life even more difficult, many plant operators have human and material limitations. Human errors include unintended adjustment or plain old lack of understanding that end up shutting down a production operation. Equipment fatigue and failure can leave a device shut-down or operating in unsafe conditions. Timely resolution to any of these problems is very difficult without the proper planning procedures in place.

Avoiding equipment shut-down is the primary responsibility for any maintenance department. Once production machinery or the associated control device unexpectedly shuts down, the whole maintenance department moves into scramble mode.

Compliance Problems & Solutions

The operator of a metal coating facility in the Midwest experienced a period of rapid growth, expanding operations from four lines to 14 in a very short period of time. Management was unaware that the increased VOC emissions associated with the expansion crossed a regulatory emissions threshold that required control. When the state EPA inspected the facility and examined the plant's records, they discovered the oversight and initiated an enforcement action. As part of the plant's settlement with EPA, it had to pay a large monetary penalty and install an oxidizer to control VOC emissions from the 14 coating lines.

Catalytic Products International designed and installed the new air pollution control system. As part of the plan, the coating lines were relocated into a common room which was designed as a Permanent Total Enclosure, or "PTE." EPA regulations give a facility credit for 100 percent capture of VOC emissions when a PTE that meets the Agency's official engineering criteria is used.

- A series of close capture hoods were designed to meet OSHA exposure limits and improve the "solvent smell" traditionally found around all the

coating machines.
- VOC emissions were vented into a 15,000 scfm Regenerative Thermal Oxidizer, or “RTO.”
- An RTO is the ideal choice when the concentration of VOCs in an air stream is relatively low because RTOs are extremely efficient. Without an RTO’s high thermal efficiency – typically 95 to 98 percent depending on the application – the amount of natural gas needed to control a low VOC air stream would be very high.

The project was completed on time and within budget and the control system successfully passed a stack test, demonstrating that it met all of destruction efficiency requirements contained in the facility’s permit and in underlying regulations.

This paper also the challenges and benefits of establishing an appropriately designed preventive maintenance program for the operators of a VOC abatement device. These systems can include: catalytic, thermal, regenerative oxidizers or concentration devices designed to destroy VOC/HAP emissions and satisfy state or federal clean air act permit requirements. It’s the kind of challenge that thousands of plant manager’s face every day and meeting it means lowest operating costs with highest uptime reliability and assured EPA permit compliance, thus meeting the primary goal of production output at the lowest cost!

Download our maintenance solutions white paper today, at http://www.cpilink.com/download-center/white-papers/maintenance-solutions/ [1].

With the EPA continually pressuring the industry to reduce emissions, control of fugitives is increasingly important to your overall emissions strategy. Download this white paper and learn more about the point source of fugitive emissions and effective methods of capture using thermal oxidizers for the most effective control. Access this white paper at http://www.cpilink.com/download-center/white-papers/effective-control-of-fugitive-emissions/ [2].

Catalytic Products International, www.cpilink.com *[3], is a worldwide leader in the design and manufacture of custom air pollution control systems.*

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