

# Putting the lid on emissions

▶ While the aroma of a cooked steak may be enticing to some, residents near a cooked-meat facility did not appreciate it.

**P**olarized Meat Company of Dunmore, PA produces high-quality meat products designed to reduce preparation time at restaurants. Certain products are pre-formed and pre-cooked, often with grill marks added to enhance the products' visual appeal and flavor. Both the incoming meat and the final products are quality controlled throughout the process.

Given the temperatures applied, the grilling process releases some aromas and greases. The processing equipment collects these emissions and ventilates them so that a clean, well-ventilated workplace is maintained. However, to be a good neighbor and meet Pennsylvania emissions requirements, Polarized Meat investigated ways to control the emissions exiting the facility.

"The issue we encountered was being situated upwind from a neighborhood occupied by a few people who had an aversion to the occasional aroma of cooked meat," says Michael Bernstein, executive

vice president, Polarized Meat Company. Although the aroma was intermittent (depending on the way the wind blew each day), complaints were made to Pennsylvania's Department of Environmental Protection. "The DEP took a hardline position and forced our hand to find a solution to the problem," adds Bernstein.

A local environmental consulting firm, Farnham and

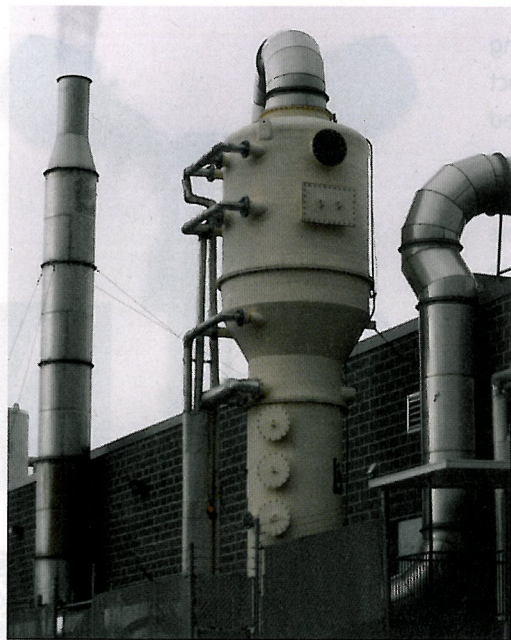
Associates, was hired to investigate an effective means of meeting both the company requirements and state regulations. The processing of fully cooked meats can release condensable greases, soluble aromas and less soluble products. Plus, Polarized Meat makes various products on multiple processing lines that produce different grease and aroma emissions. In addition, the rate of emissions varies since the company shuts down specific lines for cleaning, maintenance or equipment upgrades.

One technology investigated was wet scrubbing, a process conducted at a lower temperature that involves the condensation and absorption of the gases into a water solution. Farnham and Associates contacted a New Jersey supplier, Bionomic Industries, which had experience in wet scrubbing fryer and broiler emissions.

It was determined that though wet scrubbing would work on most of the emissions, additional capture was needed for less soluble but still pungent emissions. Activated carbon has the potential to remove aromas from the gas stream. Therefore, it was clear a multiple-stage wet system would be needed. Condensation would control the condensables, wet scrubbing would solve the water soluble portion, and adsorption onto carbon would handle the lower solubility aromas.

The resulting system incorporates a Bionomic Industries RotaBed pre-scrubber in fiberglass-reinforced plastic construction with stainless steel grids, followed by a special gas absorption and coalescing stage—and then droplet control for the wet scrubbing stage. A fan pulls the gases from the wet scrubber and delivers them to the activated carbon stage. The cleaned gases then exit through a stack to the atmosphere.

"Although the solution of wet scrubbing followed by activated carbon filters took some tweaking to become operationally sound, we are now operating without any neighborhood complaints and zero visits from the DEP," says Bernstein. ❖



▶ Polarized Meat Company selected the Bionomics' RotaBed scrubber for its plugging resistance and agitated, self-cleaning characteristics. It acts as a gas cooler and absorber in one unit. Source: Bionomic Industries.

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