GE
Water & Process Technologies

Case Study

Chicken Processor Solves Odor Control Problem with ProSweet* OC Series Product

Challenge

A large southwestern processor of approximately 300,000 chickens per day also operates a by-product feed and rendering facility. The feed and rendering preparation area is housed in a large building equipped with an air scrubber system. Two large new scrubbers have a combined airflow of 120,000 cfm (3,4000 m^3/min.) One of these scrubbers is associated with the feather rendering process. The other scrubber is associated with meat parts.

Prior to and after installation of the scrubbers, complaints from the community were received concerning odors from the plant.

The plant had tried several means of eliminating odors that arose from the processing operation, including oxidation reduction potential (ORP) meter-controlled chlorine dioxide treatment added to the scrubber sump. The ORP meter was difficult to keep operating because of probe fouling. This caused variations in the chlorine dioxide feed program and permitted awful smells to escape from the plant.

All of the methods worked to a small extent, but none eliminated the community's complaints.

Solution

After surveying the plant for various types of odors, a ProSweet* solution was proposed. The ProSweet solution focused on non-hydrogen sulfide-type odors. These were the prevailing odors associated with the operation. Essentially, the feather operation gave off a burnt protein smell and the meat operation had odors associated with rendered and baked meat.

The survey and subsequent bench testing help determine which ProSweet products most effectively eliminated the odors. The ProSweet odor neutralizer product was fed into the scrubber water sump at a rate which provided a 0.1% solution of product. The program was based upon a total makeup rate of 10 gpm (381 pm.)

A sniffer tube was installed at the outlet of the scrubbers to directly determine the course of the treatment. For program control, Lakewood pH controllers were installed on the sump water with feedback to the chemical pumps. The ProSweet chemical lowered the pH of the recirculating sump water to a control range of 7.0 to 7.7. This range was consistently obtained and could be used to run the odor control program.

Results

The ProSweet OC program was started with constant monitoring of the sniffer tube. Odors were immediately reduced to barely detectable levels. Odors around the plant improved significantly. The acrid smell of burnt feathers and cooking meat was almost entirely eliminated.

The plant has not received complaints from the surrounding community since the start of the ProSweet program. In addition, program costs are well below that of a chlorine dioxide program.

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