

No More Bathtub Ring

Self-priming pump empties process tanks

Turkey Hill Dairy, Conestoga, Pa., was having a problem with residual rinse water in its ice cream blending tanks.

Existing CIP return pumps would become air bound and leave 20 to 30 gallons of rinse water in a tank after the CIP cycle. Besides containing trace amounts of CIP solution, this water also indicated that solids were not being fully flushed from the tank, leaving a "bathtub ring in the bottom of the tank.

Plant personnel installed air eliminators, which helped a little, but didn't get rid of the problem. In addition, the air eliminators spurted CIP solution onto the floor posing a safety concern.

To solve this problem, two years ago Turkey Hill installed a Fristam Model FZ 20 self-priming centrifugal pump to return CIP solution. The FZ uses a special impeller and extremely tight internal tolerances to produce a liquid ring of fluid inside the pump. Once this ring is formed, the FZ can pump both liquid and air while producing a vacuum capable of lifting water 23 feet.

"We installed the FZ pump on the other side of the room, so it actually

pulls the solution out of the tank, through the return piping and into the pump," says Larry Ibach, fluid production manager. "Once the FZ was installed, our tank cleaning problems disappeared. The pump not only removed all water from the tanks, but also helped pull remaining water and solution from the lines themselves."

Turkey Hill manufactures standard and non-fat ice cream, frozen yogurt, tea drinks, flavored beverages and a full line of milk products. The plant is in the midst of a \$7.5-million expansion that will add 40,000 sq ft to its frozen section.

More pumps ordered

The first FZ pump was so successful that Turkey Hill purchased two for other CIP systems and five to pump from the raw and pasteurized silos. Pumps for the raw silos are located about 25 ft from the silos and are doing an excellent job.

In fact, they worked out so well that the plant uses them to circulate hot CIP solution during the cleaning step. In this application, once solution has been pumped from the CIP unit into the silo, the FZ pumps it

from the silo through a tubular heat exchanger, through the sanitary piping and back into the silo, without returning to the CIP unit.

Another feature of the FZ pumps is low maintenance. Ibach specifically mentioned the internal seals on the pumps.

"They last much longer than the seals on our other pumps. In fact, when we did have to do some work on the seals, we had to get out the instruction book because we had forgotten exactly how to do it," he says.

In addition to the FZ self-priming pumps, Turkey Hill has been systematically installing Fristam FPX-Series standard centrifugal pumps to replace existing pumps as they wear out.

"They give us better efficiency and performance, and require less maintenance, than any other centrifugal pump we've had in the plant," says Ibach. "From now on, any time we need to replace a centrifugal pump, it will be with a Fristam."

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