

The Micro Motion® Batching Solution Allows Reactors to Run at Capacity

RESULTS

- Improved reactor utilization and availability
- Enhanced process flexibility
- More efficient use of operator time



APPLICATION

Tank trucks are loaded directly from a reactor. Each tanker can hold 44,000 pounds, while the reactor can hold 29,000 pounds. To synchronize the amounts, two batches of 22,000 pounds each are produced for each tanker. A peg welded to the inside of the reactor was used to mark the 22,000 pound level. An operator was required to monitor reactor level through a site glass, throughout the process.

This procedure required full-time attention, and was prone to inconsistency because each operator gauged tank level differently. If the operator was called away, the batch size could easily result in an over-filled tanker.

Additionally, the reactor was running at only 76% capacity (22,000 pounds/29,000 pounds).

CHALLENGE

The customer had two goals for the redesigned process: more accurate control of batch size and better use of reactor time. Additionally, because the reactor is used for a variety of products, the measurement system had to be able to measure different fluids.

Additional revenue of \$720,000 per year.

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Micro Motion batches reactor products into tank trucks.



For more information:
www.EmersonProcess.com/solutions/chemical
www.micromotion.com



SOLUTION

A Micro Motion® ELITE sensor with batching software was installed. Reactors are run to capacity. After the first reactor batch has been loaded into a tank, the operator reads the total from the flowmeter, then programs the batching application to fill the tank from the second batch. The remainder of the second batch is then used to start filling a second tank, and so on. Overfill and spills have been eliminated, and the operator has been freed up for other tasks.

Rather than imposing a logistical constraint on the system, this design optimizes reactor time. For example, the old system required 4.5 reactor runs to produce 100,000 lbs, while the new system requires only 3.4 reactor runs - a 32% increase in reactor utilization. The customer has gained an additional month of reactor use for other products, and the improved availability is generating an additional \$580,000 per year in revenue, while improved throughput generates an additional \$140,000 in revenue. Finally, the customer estimates cost savings of \$3400 per year due to reduced waste and rework. The payback period for the new system was approximately two weeks.

