

Measuring Nitrogen Gas Usage Brings Major Savings to Recycler

BENEFITS

- 72% reduction in N₂ usage
- Improvements in work practices
- Improvements in accounting usage plant wide
- Avoided unnecessary capital investment



APPLICATION

A large aluminum recycler uses nitrogen across the entire plant. Nitrogen is used for cover gas or in place of moist plant air for many applications, such as purging soda silos and purging Cl₂ lines. Consumption had been going up and the N₂ supplier was telling the recycler that at the current rate of use they would require a second supply plant on site. The cost of the second plant would be \$1.3 million.

CHALLENGE

The recycler did not agree with this finding. The recycler questioned how the supply company was measuring to the plant. The supplier responded that no measurement was employed; it was solely based on truck deliveries. The gas company would gladly supply meters for measurement but at the recycler's cost. With that in mind, the recycler wanted to have control over the choice of meter technology to use. With past success on chlorine gas measurement in the plant using Micro Motion Coriolis meters, the recycler decided to get two Micro Motion meters with Smart Meter Verification. The Smart Meter Verification option would provide valuable data in case the meters were questioned by either party.

SOLUTION

Installation was easy, because no special mounting requirements were needed. After installing the meters, the recycler monitored the daily usage to gain baseline data. The recycler also kicked off a plan to look for leaks in the systems. They found leaks and corrected them as they monitored the direct relationship in reduced N₂ usage. They also found a process issue on a soda silo, partly related to sticking

We suspected all along that there was not a need for a new supply plant but thanks to Micro Motion, we now know.

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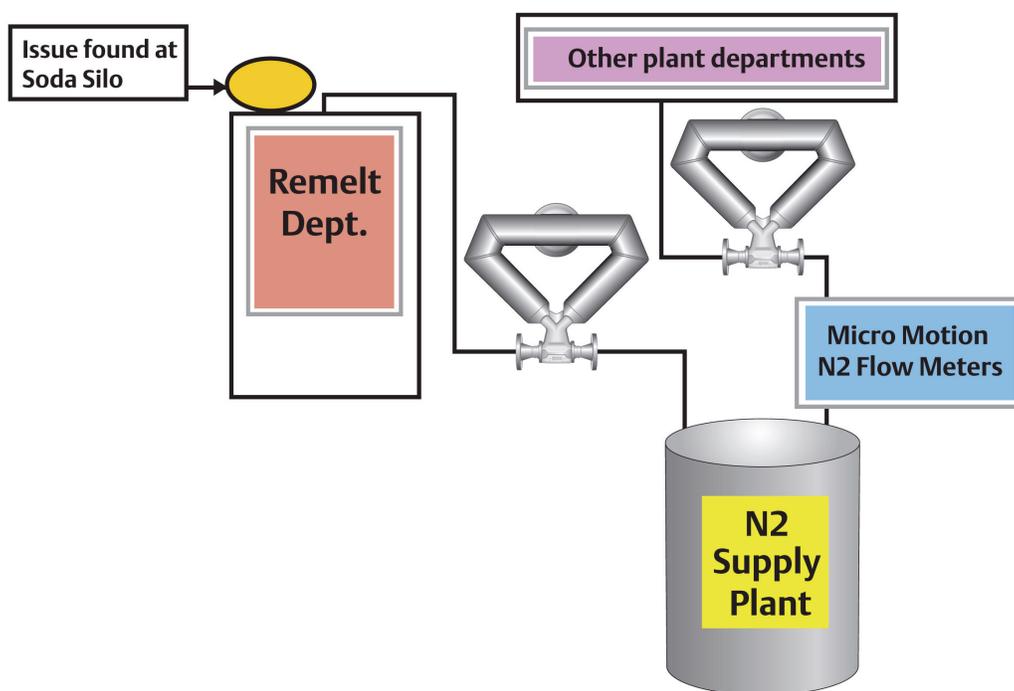
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equipment and partly due to a procedural issue. These issues were corrected to save on wasted N₂ and to monitor the true usage of that department. This helped them with overall allocation to other departments in the plant as well.

Prior to the implementation of the Micro Motion meters, the recycler was using at least 1000 lbs/hr of nitrogen. At \$0.06 per pound, that equals \$1,440 per day. Now that they have found and corrected all leaks and process issues, the recycler uses only 280 lbs/hr. That equals \$403.20 per day—a reduction of nearly 72%. In one year the financial savings impact was \$378,432. The return on investment of the meters was a mere 20 days!

And by not implementing the plan for an unnecessary second supply plant, the recycler saved \$1.3 million.



Emerson Process Management
Micro Motion Americas
 Worldwide Headquarters
 7070 Winchester Circle
 Boulder, Colorado USA 80301
 T: 800 522 6277
 T: +1 (303) 527 5200
 F: +1 (303) 530 8459

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