

# “I’m not meeting my production volume targets.”

*Downtime costs every factory at least 5% of its productive capacity, and many lose up to 20%.*

**How Much is Downtime Costing You? InTech, September/October 2011**

## What if...

- You could maximize throughput and assess meter health real-time?
- You could eliminate rework, meeting every product specification the first time?

## How do you minimize the risk of unplanned shutdowns and off-spec product?

There is constant pressure to meet production volume targets, and given the social and financial consequences of failure, the stakes have never been higher. Unscheduled shutdowns pose the greatest threat to your production targets. The best way to handle unplanned downtime is to prevent it from happening in the first place, or if that is not possible, keep downtime to an absolute minimum. Product that doesn't meet specification can also put your production schedule at risk. You need to minimize these risks to ensure you meet your volume targets.

*Refinery managers we talk to tell us about challenges like these:*

### “Unscheduled shutdowns put us behind schedule and below targets.”

In a 24/7 operation, a single hour of downtime is an hour you'll never get back. And repeated instances of downtime put your production targets at risk. Your predictive maintenance schedule is built to prevent known areas of weakness from causing a shutdown, but you wonder if there is a way to eliminate these weak links altogether. When you do shut down, you need to quickly diagnose the root cause and get back up and running as quickly as possible.

### “Reworking off-spec product delays our production schedule, wasting time and money.”

There is no industry where process fluids change more in day-to-day operations than in refining. These changing conditions make it difficult to meet the optimum blend ratio for all your product specifications. When products don't meet their specifications, you have two options: downgrade or rework. Even though rework causes delays, it's often better than downgrading the product and losing profit from product giveaway.

**MAXIMIZE THROUGHPUT**

Refineries are full of equipment that must be vigorously maintained to prevent equipment failure and process shutdown. Mechanical meters, like positive displacement and turbine meters, have internal gears that wear over time and need to be replaced on a regular schedule to prevent failure. Turbine meters are also susceptible to surging flow, which can actually break the turbine blades and send them downstream. Orifice plates have impulse lines that can plug. These are common failure modes which impact meter performance, even causing outright failure and process shutdown. Micro Motion and Rosemount flow and density meters have no moving parts to wear, or impulse lines to plug. Throughput is increased from nearly maintenance-free meter operation over the long-term. In addition, Coriolis in-situ Smart Meter Verification confirms meter integrity and performance, giving you confidence in your meter's operation, freeing your team to find the root cause of a shutdown.



*A refinery upgraded their reformulated gasoline blending facility from a sequential blender to an inline blender, with Micro Motion Coriolis meters. They doubled blending rate without increasing tankage.*

**ELIMINATE REWORK**

Changing process fluid properties affect traditional flowmeters, which should be compensated for changes in viscosity, density, and temperature. In addition, traditional flowmeters require flow conditioning as they are affected by flow profile. Accurate measurement is difficult under these frequently changing process conditions. As described above, mechanical meters also wear and cause measurement drift over time. All of these effects contribute to measurement error, increasing the probability of your product not meeting spec. Micro Motion flow and density meters have no moving parts and provide long term stability and sustained accuracy. Also, Coriolis meters are unaffected by process changes, so blends are optimized and on-spec, every time.

There are many areas in the refinery that utilize shared lines. The density output of Micro Motion Coriolis meters can be used as a continuous quality check on process flow in a shared line. Common examples are gantry or loading manifolds, and ensuring feed is from the correct tank (fresh tank instead of spent).

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