



**Refinery Gets Asset Failure  
Predictions with Nearly a  
Month of Lead Time**



Monitoring more than  
**30 assets**  
across  
**2 locations**

- *Transformation and value creation are two of the customer's guiding values. By delivering as much as 27 days advance notice of equipment failures, the Aspen Mtell solution provided an aggressive demonstration of value in alignment with the company's organizational goals.*

## CHALLENGE

Traditional diagnostic methods weren't preventing equipment failures or identifying root causes of historic failures.

## SOLUTION

The Aspen Mtell® pilot predicted failures with nearly one month of lead time, enabling planning for maintenance and rescheduling production.

## BENEFITS

Using Aspen Mtell to monitor more than 30 assets across 2 locations, the refiner was able to:

- Avoid rate reduction
- Extend asset life with load sharing and reduced reliance on spare turbines
- Capture knowledge from retiring workforce to reduce future disruption



The customer is a U.S. refiner and chemical manufacturer of chemicals, biofuels and ingredients, with operations primarily in Midwest. Part of a larger organization, the company is committed to continually transforming its performance. This is why, although the refiner and chemical manufacturer has strong internal data science resources, the company consistently seeks opportunities to improve. The company performed three project pilots in parallel to demonstrate transformation potential of their data science and work process efforts, with a focus on reducing unknown failures within facilities. Aspen Mtell was one of the pilots.

## Capturing Insight Around Root Causes of Failure

As members of the workforce retired, the company needed to capture knowledge about asset failures. They wanted to ensure the 'next engineer in line' would understand past repair efforts and not have to rely solely on vague work order history details.

The customer also sought to transform the way they executed maintenance and work processes. AspenTech prescriptive maintenance solutions allowed the team to plan how best to position and use the experts at hand. The organization was also looking at scalability that could work elsewhere across the organization and help with monitoring assets at autonomous sites.

**Change is hard for most organizations unless there is a level of discomfort with the status quo. But organizations that won't change are organizations that can't be successful in the long run.**

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# Aspen Mtell Identifies Unseen Patterns in Asset Data

AspenTech experts worked with refinery staff to develop agents that identified different types of asset behavior patterns, including normal operations, anomalies and predictors of failures.

The Mtell solution predicted failures that traditional diagnostic methods did not always detect in the refinery's turbines. Nearly 30 days of lead time to schedule maintenance and shift production provides enormous value.

Data analytics also allows the customer to adapt their work processes overall, changing the way staff look at root cause of failure analysis (RCFA). Training the team and developing a plan for perpetual evolution was critical for success.

Based on the pilot program's success, the customer plans to expand monitoring beyond turbines to cover other types of assets, including distillation as well as other fixed and rotating equipment.

**You probably don't have all the instruments you would like, but if you can do an RCFA after a failure, you probably have enough to start.**

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### **About Aspen Technology**

Aspen Technology (AspenTech) is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets safer, greener, longer and faster.

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