

Success Story

Major Refinery Achieves Control Optimization Benefits with Control Performance Monitor



Challenge

A large oil refining company wanted to improve performance at their plants by implementing a condition-based maintenance program for their control assets. Refinery managers believed plant performance could be improved by applying condition-based maintenance principles to the control assets they already had in place.

Solution

They chose Control Performance Monitor to pursue their performance monitoring and analysis initiative. The solution gave them the tools to optimize tuning on all their regulatory loops and extract more value from the control assets across their facilities.

Advantage

- Increased revenue of more than \$100,000 per year on a single unit
- Reduced maintenance costs
- Improved plant performance
- ROI in three months

Control Performance Monitor is Powered by Matrikon, which represents vendor neutrality. This product works with third-party control systems and applications.

Benefits of Continuous Control-Loop Monitoring

The initiative was driven by the need to make the refinery more adaptable to changing business conditions, plant economics and market forces. Scheduled maintenance of critical loops did not ensure that the plant was operating optimally relative to these shifting factors. Reliance on scheduled maintenance meant critical loops were regularly checked whether they needed it or not, while loops that were considered less important ran until failure. This had a negative impact on plant operations.

Continuous monitoring of regulatory control loops would allow refinery personnel to see how deteriorating performance impacts advanced control applications and plant systems.

After a major plant turnaround and expansion in 2003, Control Performance Monitor was implemented on all of the regulatory control loops in the plant. In addition to monitoring the function of critical loops, Control Performance Monitor identified loops that

were considered non-critical prior to the turnaround but were now having a significant negative impact on operations.

Control Performance Monitor Provides Quantifiable Benefits Quickly

Engineers found an example of a single loop that showed room for improvement in their crude topping unit. Using Control Performance Monitor, personnel identified oscillations in the bottom-level feed controller that prevented operators from maximizing column throughput. Tighter bottom-level control on the crude fractionator allowed the multivariable controller to charge the column with approximately 500 additional barrels per day of crude, thus improving plant revenue by more than \$100,000 a year.

In another instance, several new controllers were added to the Alkylation unit during the plant shutdown. Their initial tuning parameters were entered based on estimates and were to be retuned based on operator input. Several of the loops that were performing poorly were not reported after the recommissioning of the plant and were impacting the unit's performance. Control Performance Monitor helped quickly identify these problem loops and properly tune them for the first time. The impact on the unit was immediate.

“Based on our experience with Control Performance Monitor, control monitoring and assessment technology has been deployed at all of our U.S. sites,” the refinery’s engineering manager said.

Condition-Based Maintenance Starts with Control Performance Monitor

Control Performance Monitor’s ability to monitor every loop in the refinery continuously was critical to improving plant performance.

In many cases, it is the gradual performance decline in low-priority loops that has a significant impact. The increasing demand to adapt quickly to market conditions means more adjustments to plant operations. Control Performance Monitor has become key in ensuring base regulatory controls are performing at their best.

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Having realized significant improvement with their regulatory control loops, the refining company has deployed Control Performance Monitor for continuous monitoring of multivariable controllers and automated step testing.

Through every control layer, from regulatory to inferential and advanced process control levels, Control Performance Monitor is the only monitoring and analysis platform you need. Control Performance Monitor helps detect, prioritize and diagnose control issues. It also allows users to quickly fix problems that detract from profitability, optimizing process performance while reducing demand on maintenance resources.

**POWERED BY**
MATRIKON

‘Powered by Matrikon’ symbolizes that this product/solution is system and application independent.

For more information:

For more information about Control Performance Monitor visit our website www.honeywell.com/ps or contact your Honeywell account manager.
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