

# Profit™ Performance Monitor

## Product Information Note

**Performance Monitoring of APC applications is an important foundation that ensures the delivered benefits of APC are visible at all levels of the organization. Honeywell Connected Plant Profit™ Performance Monitor, a cloud based solution enables collaboration across operations, process engineering, APC teams and management to understand what is limiting APC from driving the unit to its best potential. It identifies degradation of unit performance and provides expert guidance to maintain unit profit performance.**

### Profit Performance Monitoring Challenges

Process Plants have been investing in advanced applications like APC, a proven technology that reduces process variability and inefficiency, improves product consistency, and increases throughput by allowing operations to push constraints to the limits and achieve higher return on assets. However, achieving and sustaining these benefits has not always been easy. It requires a sound strategy and adherence to best practices in the realm of Performance Monitoring of APC applications. Current challenges are typically:

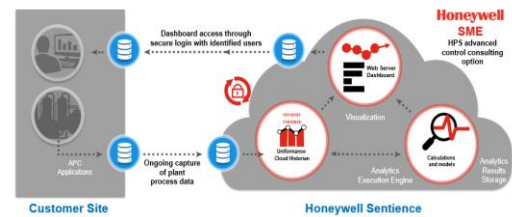
- Quantifying APC benefit erosion due to process disturbances or equipment issues, preventing performance degradation.
- Understanding how well APC is performing across your assets.
- Identifying how to improve unit performance to increase profitability.
- Understand the lost opportunity cost, asset performance and key constraints on a real-time basis.

### Solution

Profit Performance Monitor, a cloud based solution, enables operations, process engineering, APC teams and management to understand what is limiting APC from driving the unit to its best potential. The overall goal is to engage all stakeholders of unit performance to ensure APC benefits are sustained.

It prioritizes issues by financial impact - such as over clamped MVs and CVs, high process variance, and MVs dropped by operators due to instrumentation issues.

It identifies and tracks constraint violations for main CVs, with analysis of probable causes.



### Benefits

*Profit Performance Monitor, improves collaboration between operations, the extended APC team and management to increase profitability by:*

- *Providing visibility into the economic consequences of their plant process performance as cost of lost opportunity.*
- *Providing lost opportunity from key process variable changes and categorized causes.*
- *Identifying top process variable sources of economic impact.*
- *Identifying and comparing operations shift performance.*
- *Providing expert guidance through actionable instructions to identify restrictions that are impacting profitability.*

*It ensures sustainable benefits over varying operating conditions, visualizing real time unit profitability. Provides opportunities for continuous process improvement, see benefits of operational changes and impact on profitability.*

**Identifies 10 to 20% lost benefits/year per APC application.**

## Key Capabilities

Estimates the economic cost of:

- clamped MVs, CV limits, dropped MVs related to short term operations, equipment, instrument issues,
- lack of confidence in the APC performance,
- lack of awareness of the overall performance impact and
- variance on operator skills.

Monitors APC to optimize to key equipment constraints while minimizing constraint violations.

Trends performance over the longer term and segments performance by shift.

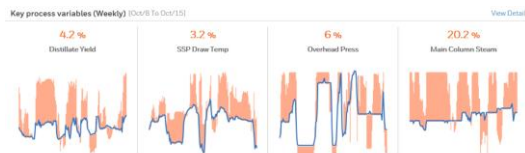
Provides detailed analysis against APC historical data identifying process bottlenecks.

## Dashboard

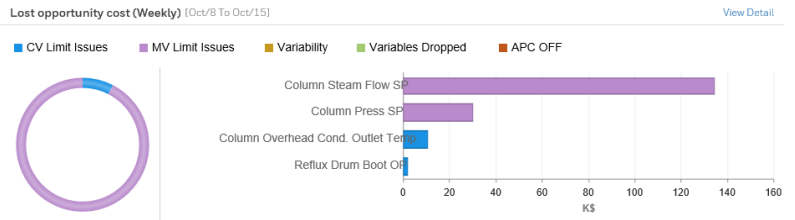
**Long Term Performance** - Provides information on overall incremental value of APC delivered for the unit as well as overall cost of lost opportunity (actual versus best case) over a daily, weekly and monthly period.



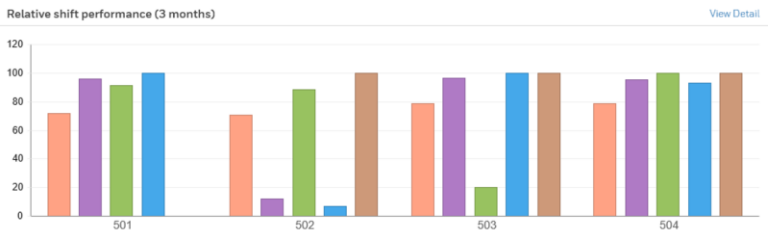
**Key Process Variables** - Provides information on incremental value as well as lost opportunity (actual versus best case) with respect to key process variables over a daily, weekly and monthly period.



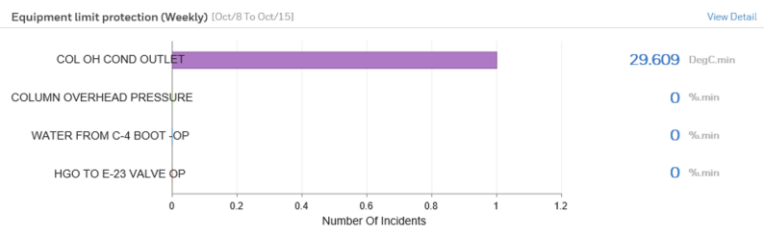
**Lost Opportunity Cost** - Provides prioritized causes by financial impact which are categorized by CV limit issues, MV limit issues, high process variance, variables dropped by operators, and APC off. Ring plot totals all lost opportunities grouped by category.



**Relative Shift Performance** - Provides frequency of constraint violations segmented by shift rotation.



**Constraint Violation Metrics** - Provides frequency and magnitude of constraint violations grouped over categories of violation.



**Expert Guidance** - Identifies restrictions that are reducing profitability with actions to take to improve performance of the unit. Capturing user entered comments or status updates of every action item.

Current Action Items

Open InProgress Shelve

- Relaxing upper/lower bound on SIDE DRAW FLOW (MV2) can save \$7K per week. Expand operating limits
- REBOILER STEAM FLOW (MV3) runs in manual too much. This costs \$1.162K per week. Place back in service
- Relaxing upper/lower bound on REBOILER STEAM FLOW\_Limit (MV3) can save \$0.343K per week. Expand operating limits
- Relaxing upper/lower bound on TOP TEMPERATURE (MV1) can save \$0.275K per week. Expand operating limits

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Action Items

- Follow up with CDU shift team leader on reasons for tube skin temperature limit change.

## Connected Solution Process Data Flow

From the customer site, process data is collected directly from the site historian. Through a cloud connector using a secure internet connection, the site process data is put into the Uniformance Cloud Historian running in the Honeywell Sentience platform. Data is taken from the Cloud Historian where processing and analytics of the data is done using an analytics execution engine, and the results are stored back into the Cloud Historian. From here the data gets flowed back to the site through a dashboard using a secure login.

This provides the advantage of the data being available in the cloud where collaboration can be made with one version of the truth.

## Support Services

Profit Performance Monitor programs can be enhanced with the optional addition of Honeywell advanced control consulting services provided by a Honeywell Process Solutions subject matter expert (SME). SME is a domain and solution expert who would have near real time view of all Model Predictive Control applications and would provide key recommendations to customers on key issues and future improvement areas.

## For More Information

Learn more about how Honeywell Profit Monitor can fit your operations, visit [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell Account Manager.

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