The performance monitoring solution provides customer personnel with visibility into real-time plant performance against defined key performance indicators (KPIs) such as heat rate and efficiency, insights into the cause of any deviation, and actionable recommendations to improve the necessary KPIs to operate at optimal efficiency.

When performance monitoring is extended across a fleet of assets, it provides visibility to fleet performance and allows power generation companies to benchmark their sites and apply lessons learned from individual classes of equipment or plants to an entire operation.

The control-loops solution increases the transparency of control system performance by quickly diagnosing disruptive loop tuning issues and predicting potential process disruption. The solution combines domain expertise and advanced algorithms to report customer-specific KPIs that improve control system maintenance planning.

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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</thead>
<tbody>
<tr>
<td>Continuous analysis of Key Performance Indicators (KPI’s)</td>
<td>Accelerates problem-solving through 24/7 visualization and analysis of control loops</td>
</tr>
<tr>
<td>Automatic, non-invasive data gathering</td>
<td>Increases availability and utilization through reduced process variability</td>
</tr>
<tr>
<td>Configurable alerts (via email or text) are supplied when KPIs are outside site-specific thresholds</td>
<td>Lowers maintenance, raw material and energy costs through quick identification of process errors or trends</td>
</tr>
<tr>
<td>On-site or remote access for customer and ABB support personnel</td>
<td>Reduces response time and travel expenses by providing remote access to ABB experts</td>
</tr>
<tr>
<td>Regular performance analysis by ABB experts identifies issues, identifies trends and recommends performance improvements</td>
<td>Establishes a solid foundation for continuous improvement, including higher availability, increased production and improved quality</td>
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</table>
ABB Loop Performance Monitoring Service helps to get the best value from their automation assets by finding and applying the best tuning parameters.

- 02 Reduction of variance

Scheduled monitoring and analysis to quickly identify performance issues

ABB Loop Performance Data is viewed via a web-based user interface that is easily accessible by customer or ABB personnel.

ABB Loop Performance Monitoring Service continuously analyzes data to greatly reduce the time and effort needed to identify loop volatility. Data is classified based on specific KPIs to provide a list of issues that are then prioritized on the basis of severity, process area, criticality and/or financial impact.

Problem areas are isolated and disturbance sources, such as dead time, inverse response and outliers, are identified. This analysis helps to identify the root cause of the problem, to trend performance history more accurately and to provide actionable information that will reduce process variability.

More accurate troubleshooting with configurable KPI’s

With the ABB Loop Performance Monitoring Service, the best tuning parameters are found by monitoring KPIs for the following categories:

- **Control:** To keep the error at or near zero, the output of the controller is analyzed to find the source of out-of-sync measurements, such as incorrect tuning parameters.

- **Process:** To confirm that valve or final control element (FCE) for the process is correct for that process type, and is repeatable and predictable. Disturbances that could affect this relationship, such as process changes or FCE failure, are analyzed.

- **Signal processing:** Ensures the measurement to the controller is as clean as possible by monitoring factors such as outliers or calibration that would create an inaccurate measurement.
Around 200 to 400 control loops are used in power plant applications. During plant commissioning the control loops are adjusted to operate the plant with the greatest efficiency, but what happens later on?

**Control circuits change over time (drives and valves change due to wear)**

- Controls are switched to manual, thus reducing efficiency
- The experts required are not available any more
- The quality of control loops are not monitored systematically
- Adaptation to changed plant areas/equipment does not take place

**ABB Ability™ Collaborative Operations Center**

Within new ABB Collaborative Operations Center experts work together to analyze the performance data and notifications to generate reports and provide consultancy support.
What makes Loop Performance Service unique?

DCS system independent

Automatic monitoring of a large number of controllers

Expert knowledge conserved in KPI’s calculations

Meaningful KPI’s instead of mathematical indices

Classification allows focus on the most important issues

Stored history of KPI’s leads to sustainable results

Active notification of emerging problems

Customer-specific improvement offers for tailor-made solutions:
Within the new ABB Collaborative Operations Center, experts across the world work together to analyze alarm data and report possible changes and alarm reduction for our customers

Customer specific plant assessments with operator and maintenance staff Q&A sessions

Implementation of online analyzing tools based on S+ Historian

System independent Collaborative Operations Center analyzing support with customer specific reports

Workshops for improvements (consulting)