

# Control Performance Consulting Services

## Service Description

The largest and most frequent process improvement opportunities are often found in a plant's base regulatory control foundation. Control Performance Consulting Services are aimed at optimizing the performance of base regulatory control by minimizing variability associated with control strategies, controller algorithms, tuning, field devices, and process design.

Client engagements are performed by senior consultants who bring an in-depth understanding of process dynamics, control equipment, and control strategies and use systematic and scientific methods for control design, coordinated loop tuning, and process troubleshooting.

## Service Objectives

- Improve operational performance by minimizing variability related to regulatory process control
- Evaluate and ensure that existing regulatory controls are working as well as they could
- Investigate and identify sources of excessive process variability and recommend ways to mitigate
- Review new control strategies and control designs to verify that controls will work as planned
- Maximize control performance with systematic, coordinated loop tuning of key control loops
- Troubleshoot and solve critical process control problems

## Typical Situations

- Investigating automation plant improvement opportunities with regulatory control performance as a primary area to assess
- Seeking reduced variation of key process variables, keeping them closer to quality specifications and potentially allowing shifting of set points for increased efficiency
- Needing to reduce excessive oscillations on critical control loops that cause process upsets or equipment trips
- Requiring assistance in control design for processes with complex dynamics
- Needing to establish a proper regulatory control foundation to enable effective advanced process control

## Scope of Service

Scope is dependent on the needs and situation of the client, yet generally falls into one of the following categories:

- **Control Performance Study** - Investigation that may be a control strategy review or a limited investigation around part of a process. A consultant will inspect the process, gather data manually, and identify and prioritize critical opportunities for improvement. Involves testing the process online, identifying process dynamics and non-linearities, optimizing controller tuning, and recommending improvements to control strategy, control equipment, and process control configuration.
- **Control Performance Project** - Includes all the study scope above but in greater detail, with onsite measurements or computer simulation, calculation of return-on-investment, and implementation of selected control improvement recommendations. It may focus on identifying and removing the source of process problems for a particular process unit or area.
- **Control Performance Program** - A sustained effort for ongoing variability reduction after initial control performance improvements have been made. Includes scheduled plant visits by a consultant for periodic checks, adjustments, and continuous improvement analysis. Often involves training to allow plant personnel to sustain increased performance.
- **Specialized Services** - *Pre-Shutdown Control Performance Service* for identifying and prioritizing critical control items to focus on during a turnaround. *Control Performance Start-up Service* to help ensure smooth startup of new control designs or strategies. *Emerson EVI (EnTech Variability Index)* for benchmarking and reducing product variability on paper machines.

## Deliverables

- Onsite visit and formal assessment by a senior Emerson control performance consultant
- Summary of preliminary findings and initial results upon site departure
- Offsite analysis and detailed report of results and prioritized recommendations
- Follow up conference call or meeting to discuss report
- Implementation of selected control improvement recommendations (Control Performance Project)
- Periodic visits and training to sustain control performance (Control Performance Program)

## Service Activities

- **Conference calls** prior to onsite work to confirm control areas for study and visit plans
- **Onsite kick-off meeting** to review background, objectives, and planned activities
- **Control performance assessment** to investigate and determine what variability exists, root cause sources, impact on production, and recommended improvements
- **Preliminary findings meeting** to summarize initial findings and results upon site departure
- **Offsite analysis and report generation** documenting results, analyses, and recommendations
- **Report transmittal and follow up** to deliver final report to the client and discuss or clarify results
- **Implementation** of selected control improvement recommendations (depending on scope)

## Service Duration

As each study will be customized to a client's specific needs and situation, duration will vary depending on scope and complexity. A typical Control Performance Study can take two to five days onsite, one week for report. A Control Performance Project is a longer engagement, typically between two and six weeks.

## Service Ordering

Please contact your local Emerson sales office to retain this service. Prior to order acceptance, Emerson will issue a written proposal for your review and approval to ensure that scope, deliverables, timing, and budget meet your needs and expectations.

For additional information or questions, you can reach us at [AAT@emersonprocess.com](mailto:AAT@emersonprocess.com)

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