

Cybertech Automation helps industry build, configure, and commission instrumentation, electrical, and control system equipment.

CONTROL OPTIMIZATION

Cybertech's process control experience can optimize the performance of your existing plant assets – by tuning them based on their actual physical state and using the existing control system – **all without changing or modifying equipment.**

When such optimization is done **before advanced process control** with proper consideration of real-world equipment conditions, maximum benefit and efficiency can be realized at minimal cost. Before making new capital investments, ensure that you're extracting everything possible from your existing assets/control system.

Maximum ROI on your equipment can be achieved by the least expensive interventions.

Tasks	Cost	Performance	ROI
Tuning and control strategies	•	•••	••••
Performance supervision	••	••••	•••••
Regular maintenance	••	•••	•••
Advanced control	•••	•••	••
Process re-design and modifications	••••	•••	•

WHY OPTIMIZE?

SOME CONTROL LOOP FACTS

ONLY 25%
 OF CONTROL LOOPS
 PERFORM BETTER IN AUTO
 THAN IN MANUAL
 DUE TO THESE
 REASONS

- 97% of control loops are PID.
- 3% of loops are MPC/APC, fuzzy logic, Expert System, crisp logic, etc.
- 20% of loops are improperly designed.
- 30% of loops demonstrate control valve related problems.
- 15% of loops are improperly installed.
- 30% of loops have nonsensical tuning parameters/settings.
- 85% of loops have improper tuning parameters.

* Typical numbers from mining/process industries

Contacts

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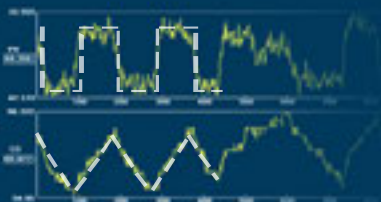
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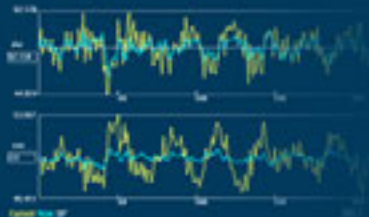
WHAT COULD GO WRONG?

STICKTION



Sticktion makes it hard to move a valve when the controller error is small – also making the proportional action small and constant. Integral action slowly pushes the controller output, and it can develop a triangular pattern while the process variable develops a square wave pattern.

NOISE BAND ON PROCESS VARIABLES



High noise blurs the signal read by the controller. If not filtered, this noisy signal will over-manipulate the valve – reducing valve life.

OVERSIZED VALVES



A small controller output change can produce a large process variable change. If the final element is oversized, the controller is not used at its full potential. In addition, valve problems are boosted by the large process gain.

NON-LINEAR PROCESSES



If process model varies over a range, process variables can behave differently at the low and high ends. When a loop has been tuned only for the low end, it may operate erratically at the high end.

CASE STUDY

PLANT POWER DIPS

PROBLEM

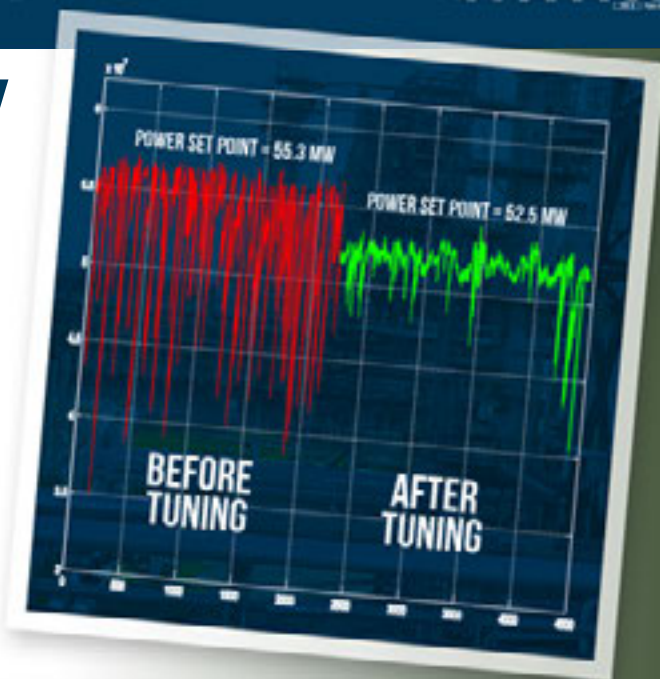
- Frequent power dip occurrence
- Lower power average meant less production

ACTION

- PID configuration was modified
- Implementation of feedforward controller per phase (PEL)
- PID tuning was performed

RESULTS

- Power dips were reduced by **95%** (**\$3.9M value in production yearly**) after just 3 weeks of work at site



GETTING IT RIGHT THE FIRST TIME

Cybertech can assist you with optimizing existing assets, but we're also ready to support you with our best practices for new plants. By being involved during the design stage, we can have default PID parameters ready before start-up – including tuning parameters and filters.

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