

LOOP PERFORMANCE MONITORING

Transforming PID Health Into Filler Line Profit

\$330K–\$450K

ESTIMATED VALUE OF A
10-POINT OCE GAIN,
ONE FILLER LINE

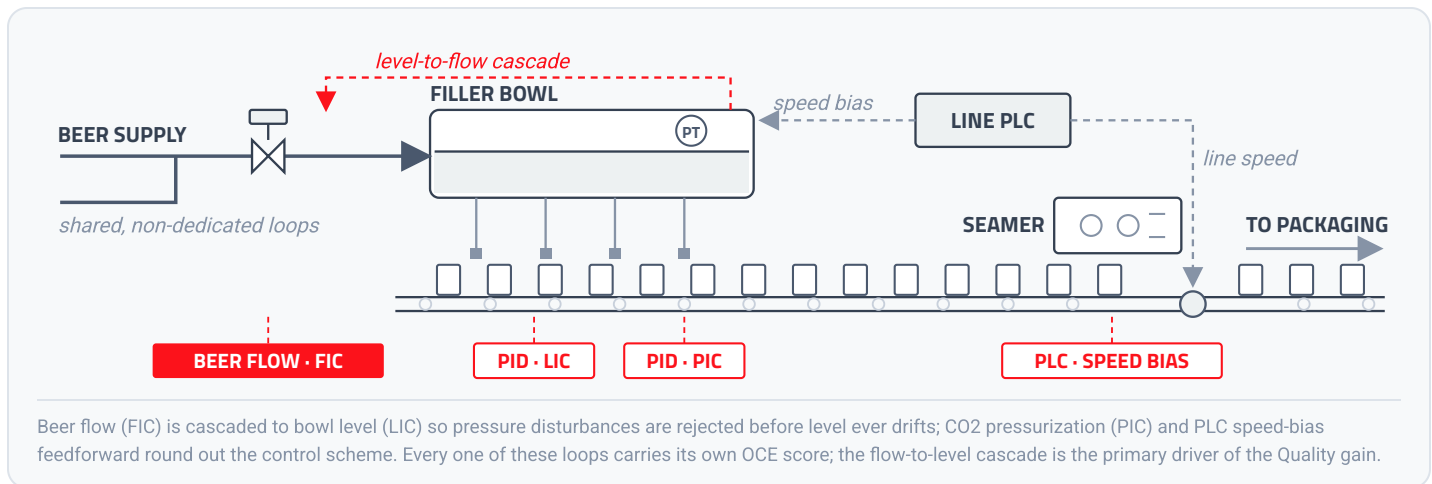
Retuning the Filler Level control loop on a high-speed canning line reduced the production reject rate from 1.0% to 0.07% — a 93% cut — lifting the Quality component of PlantESP's Overall Controller Effectiveness score. That improvement was validated at over \$1.8 million annualized; reconciled against the line's true 24/7/365 operating hours, the underlying value likely runs \$1.9 million to \$5.9 million a year.

THE CHALLENGE

No Room for Error at the Filler

A canning line's Filler Level process sits directly upstream of every case a brewery ships. The bowl must hold level within a narrow band — flood the upper constraint and cans can't be flushed of air and pressurized with CO₂; miss the lower constraint and cans go out under-filled. Non-dedicated beer loops feeding multiple bowls compound the problem, since engaging and disengaging loops disturbs feed pressure and destabilizes flow control loop by loop.

Reject rate alone puts a hard number on that erosion: cascading beer level control to the flow loop, so the level controller corrects for drift before the faster-reacting flow controller reacts to pressure disturbances, cut waste from 1.0% to 0.07% — a documented \$1.8 million a year, likely higher once continuous operation is priced in. Lift a filler line's overall OCE score by 10 points — spread across Availability, Performance, and Quality — and the combined value can reach \$330,000 to \$450,000 a year.



Boilers

A flooded bowl — a Quality-leg failure — prevents proper CO₂ pressurization and rejects the can.

Under-filled cans

Missing the lower level constraint is a Quality-leg miss the moment fill falls short of spec.

Capacity shutdowns

Breaching a beer loop's pressure limit is a Performance-leg failure — the line saturates and stops.

Startup/shutdown waste

Violent starts and stops strain the bowl — an Availability and Quality issue during every changeover.

Line changeover strain

Shared, non-dedicated beer loops disturb pressure — degrading Performance the instant loops engage.

Measurable, Loop by Loop

The connection between PID performance and canning line economics is not theoretical — it's calculable, loop by loop.

PlantESP™ is the leading control loop performance monitoring (CLPM) solution, actively scoring PID performance on a plant-wide basis, and it has been successfully deployed across food and beverage packaging lines.

Among its metrics, PlantESP scores every loop using Overall Controller Effectiveness (OCE). Like OEE, OCE is a composite KPI that assesses three operating attributes — Availability, Performance, Quality — and facilitates the benchmarking of individual PID loops, unit operations, and entire facilities.

≥ 95% **AVAILABILITY**
Time in Normal —
auto/cascade

≥ 90% **PERFORMANCE**
Time Not Saturated — off
limits

≥ 85% **QUALITY**
% Good Error within
tolerance

Overall Controller Effectiveness =
Time in Normal × Time Not Saturated × % Good Error

A loop meeting all three thresholds scores at **72.7%** - the threshold for world-class control. In contrast, because the terms multiply, a loop running only 80/80/80 falls to **51.2%**. OCE highlights weakness in any one dimension - which is why it gauges control quality and financial exposure alike.

**FRAMING POOR
PERFORMANCE AS LOST
PROFIT**

93%
Reject rate reduction
— 1.0% to 0.07%
(OCE Quality)

\$1.8M
Annualized value,
validated against
four months of data

\$1.9M–\$5.9M
Reconciled value
at true 24/7/365
line operation

\$330K–\$450K
Estimated annual value of
a 10-point OCE gain, one
filler line

DIGITAL LIFECYCLE SOLUTIONS

A project-based, control-strategy-improvement offering purpose-built for interactive, multi-loop unit operations like a high-speed canning line — engage to find and fix the losses, then sustain the gains.

ENGAGE
01 — 04

01 KICK-OFF

Prioritize by Strategy

Rank loops, units, and areas
against the plant's own goals
— spec, energy, throughput.

02 MONTHLY

Identify Bad Actors

Control Station engineers
pinpoint that scope's lowest-
OCE loops — its top 10 bad
actors — every month.

03 MONTHLY

Tune the Loops

Four hours per month of
direct, hands-on tuning
support to resolve those
loops.

04 AS NEEDED

Strategy Change

When tuning cannot close
the gap, escalate to a more
strategic assessment and
action plan.

**SUSTAIN
ONGOING**

QUARTERLY

Assess the Value

Financial impact of the 10–20%
typical PGE gain from resolved
bad-actor tuning.

MONTHLY

Track OCE Live

Availability, Performance, and
Quality trends in PlantESP keep
each loop's OCE score visible.

QUARTERLY

Report to Stakeholders

Benchmark against industry
peers for sponsors and non-
technical stakeholders.

ANNUAL

Plan the Roadmap

Update a one-to-three year plan
for closing whatever
performance gap remains.

DECADES OF DOMAIN EXPERTISE

Control Station is the process industry's leading provider of controller performance monitoring and analytics. PlantESP™ supports hundreds of facilities worldwide, backed by an engineering team focused solely on process control.

Next Step: See What OCE Reveals About Your Filler Line

Contact us for a no-obligation loop performance assessment and a line-specific OCE estimate of the opportunity hidden in your Filler Level control.

REQUEST AN ASSESSMENT