

CUSTOMER CHALLENGES: Maintaining Process Stability through Improved Disturbance Rejection

Do Process Disturbances Upset Your Profits?

Improving Stability and Profitability:

As a member company of a worldwide group leader in cement production, Essroc Italcementi Group understands that process disturbances have a direct and negative impact on profitability. Disturbances oftentimes result in inconsistent production quality and reduced throughput. What's more, disturbances can cause staff to operate control systems in manual mode rather than automatic. That places additional strain on a plant's resources and reduces its overall efficiency.

Essroc has successfully applied Control Station's award-winning LOOP-PRO software technologies to tackle the issue of process disturbances. At the company's plant in Logansport, Indiana, Essroc has put LOOP-PRO to the test on processes ranging from Kiln Feed Rate to Roll Press Bin Weight. In each instance, the technology proved an easy solution for improving control and mitigating the impact of disturbances. For Essroc, that's an easy decision and a profitable solution.

“Operating the plant's loops in automatic reduces the need for operator intervention and it improves the plant's overall production efficiency. Control Station's tools are helping us achieve that goal.”

François Léonard
Corporate Manager of Automation and Control
Essroc Italcementi Group

When a Picture Tells a Thousand Words

Smooth operation of the kiln can have a significant impact on both production throughput and energy consumption. Upstream disturbances can cause the kiln's temperature to oscillate, slowing the feed rate and increasing the use of fuel. Application of LOOP-PRO at Essroc's plant in Logansport, Indiana quickly demonstrated how the software could improve the plant's disturbance rejection capabilities.



Image 1 is a strip chart from Logansport's B Pump Feed Rate. As the image shows, upstream disturbances resulted in oscillations that spanned a four (4) hour period. The oscillations showed signs of instability as the process struggled to compensate and correct for the disturbance. Manual operation of the loop was required to reestablish control.

Image 1

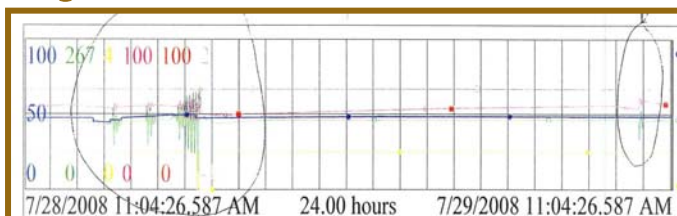


Image 2

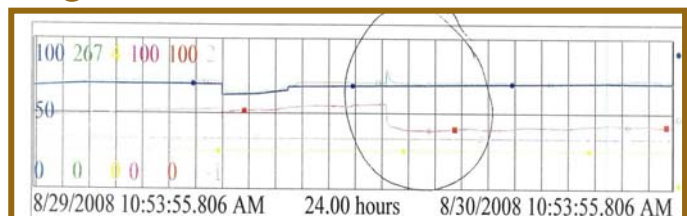


Image 2 showcases a similar disturbance to the B Pump Feed Rate but a dramatically improved result. Using LOOP-PRO, operations staff accurately analyzed the dynamics of this process and determined alternate parameters for the PID controller. When the process was later hit by the disturbance, the loop reacted quickly to dampen any impact on the feed rate and to maintain steady control over the process.