

SUMMARY

Challenge

Increase process capability and drying capacity

Solution

Advanced, repeatable evaporator start-up

Results

More agile production, less waste, less energy

BUSINESS CHALLENGE

Wyeth (now part of Nestle) manufactures nutritional powders and infant formula to serve local and global customers.

Perceptive Engineering was approached to install Advanced Process Control on four of their manufacturing lines in Europe and Asia.

One of the key issues identified in the Perceptive Audit was the need to improve Evaporator performance. Variability in operation, especially at start-up, was having an adverse impact on powder rate, energy use and dryer performance.

PERCEPTIVE SOLUTION – ADVANCED PROCESS CONTROL

Manufacturing a wide range of formulations requires a lot of tank switching and re-starting of production assets. During start-up of an evaporator, many parameters must be continually adjusted before product specification is achieved. With high variability between different products, repeatability can prove difficult.

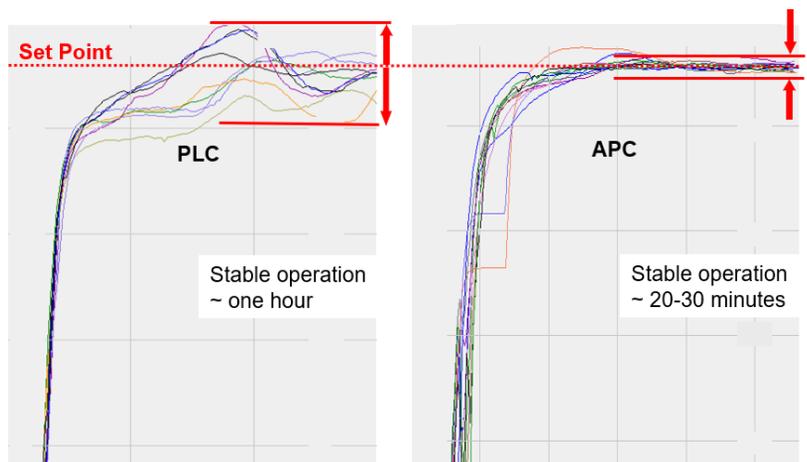
Advanced Process Control is able to model the behaviour of the evaporator under different conditions and across all formulations. Perceptive’s software was used to analyse previous production runs and identify the ‘ideal’ operating envelope for every product. By understanding ahead of time how best to run the plant for any given formulation, the finisher could be optimised to reach solids targets much more quickly, every time.

This off-line analysis was then brought into Perceptive’s real-time control suite. Control of the evaporator was passed to Perceptive’s system at a much earlier stage in the start-up cycle.

RESULTS

The start-up controller was commissioned on all products, achieving the same results:

- Significant reduction in solids variability, more consistent feed to the dryer.
- Faster time to setpoint, for more agile manufacturing, quicker batch changes.
- Reduced solids overshoot, reducing the risk of evaporator fouling, to extend run times between CIPs.
- Operators freed up for other tasks during start-up, providing further OEE gains



Variability around setpoint target is normal under PLC control

PerceptiveAPC increases process responsiveness

“Advanced Evaporator Start-up has given us many operational benefits. The Perceptive controller is now optimising our production assets right from start-up to shut-down.”

Romeo Laus, Engineering Manager, Wyeth