



ABBOTT NUTRITION IMPROVES PROCESS CONTROL

The problem for operations managers at Abbott's production facility in Granada was not a lack of data. "We had a lot of data and information, but in the end, we weren't using that data and information to make decisions," Julio López Ortega, Senior Engineer, Process Monitoring & Control at Abbott said during his PI World 2018 presentation in Barcelona. As part of their process monitoring initiative, engineers at the Granada facility decided to launch a pilot project around their pouch filling process. The project had several clear goals in mind:

- *Improve real-time process monitoring and control*
- *Increase overall equipment effectiveness (OEE)*
- *Increase yield by reducing scrap and taking control of filling machine leaks and overfilling*
- *Reduce product variability and increase batch cycle times*

Abbott Nutrition, a division of the global healthcare company Abbott, first began working with OSIsoft's PI System™ in 1999 at the company's manufacturing plant in Columbus, Ohio. In 2012, based on the success at this plant, the company entered into an Enterprise Agreement with OSIsoft to roll out the PI System to all Abbott Nutrition manufacturing sites globally. Today, every Abbott Nutrition production facility has its own PI System server, collecting tons of real-time data from sensors on their production floors where many well-known brands, including Pedialyte, Ensure and ZonePerfect are manufactured.

At Abbott's production facilities in Granada, Spain, engineers recently launched an initiative to figure out how the PI System

could help them extract more value from their manufacturing data and turn that valuable information into data-driven process control.

CLOSING THE GAP BETWEEN DATA AND INSIGHT

The first step was to work closely with their quality assurance department to identify critical process parameters and critical quality attributes. The facility was already collecting data for weight, temperature of the filling machine jaws, oxygen levels, bulk density, flowability, moisture and leak detection. However, these were collected in different tools and to transform this data into actionable information Abbott needed a way to collate, present and contextualize data for machine operators.

CHALLENGE

Need for greater process control to reduce product variability.

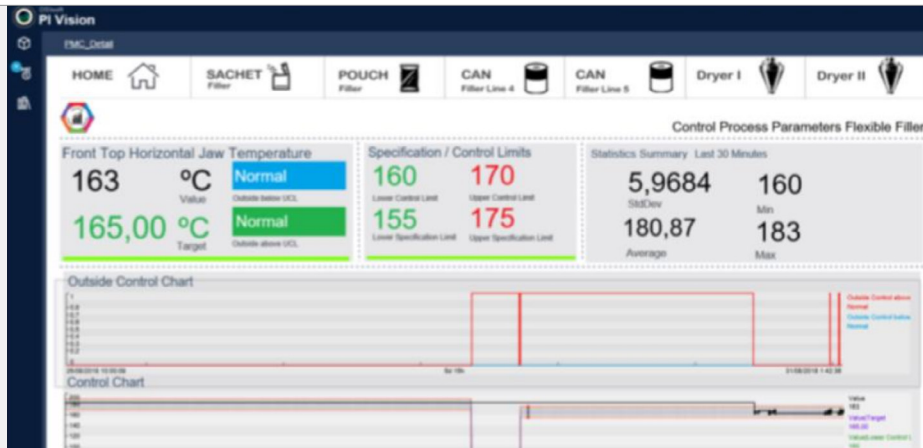
SOLUTION

Real-time PI Vision dashboards on the shop floor and SQC Analysis

BENEFIT

Increased OEE by 2%, reduced scrap, and increased yields

PI Vision allows Abbott employees to drill down into critical process parameters and do root cause analysis when problems arise on their production floor.



Once the process parameters were established, engineers at the Granada facility created PI Vision dashboards to monitor the status of filling machines and the various stages of the filling process in real time.

Green areas of PI Vision screens now indicate when the process is within designated parameters. Red areas indicate a process anomaly, and operators and managers can drill down for more detail. Drill-down screens allow floor managers to do root cause analysis to figure out what is going on with a particular machine.

“This type of visualization is very close to the machines the operators use. It’s very intuitive,” said José Miguel Gutiérrez Guerrero, an operation technician at Abbott. The PI Vision screens display recipe information for their various products so floor managers can ensure the correct recipe has been sent to the machine. The displays also continuously monitor the filling process for leak detection and overfilling. The facility even uses PI Vision to monitor data flow from their OPC server to ensure there are no problems with their data collection and data quality.

While PI Vision provides a real-time window for shop floor operators, the plant uses additional PI System tools, including the PI OLEDB Enterprise transpose function to move data from the PI System into advanced analytic software such as InfinityQS. They also use the

PI ProcessBook SQC add-in tool to prepare statistical quality control analyses of their data.

MEASURES OF SUCCESS

PI Vision screens and advanced data analysis have allowed the Granada plant to get their process parameters under control. The insights gained from data have reduced product variability. The facility has also minimized the need for destructive product testing and reduced the demand for raw material and packaging material by decreasing leak events and shortening cycle times. These measures have led to increased product yields and lower costs.

“We now have the opportunity to increase the speed of the filler by more than 10%,” Ortega said. The plant has also improved OEE by 2%, “which is very good,” Ortega explained, “because OEE is something very difficult to increase.”

Looking forward, Abbott hopes to expand their use of the PI System and use the same process control tools in other plants. “Because we are using PI standard tools [...] the replication will be very easy,” Guerrero said. The vision, he explained, is to create a global infrastructure, based around the PI System, that uses the same architecture and visualizations across all global plants.

PARTNER:
SEEQ

PI System Components:

PI Server™

- Data Archive
- Asset Framework (AF)
- Asset Analytics
- Event Frames
- Notifications

PI Vision™

PI ProcessBook™

PI DataLink™

PI OLEDB Enterprise



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— Julio López Ortega, Senior Engineer, Process Monitoring & Control at Abbott

For more about Abbott and the PI System, watch the full presentation: [here](#)

Guerrero, José Miguel Gutiérrez and Ortega, Julio Lopez. “The Usage of PI Analysis and SQC to Reduce Deviations in Fill Finish Lines.”