IPC's Custom Process Equipment Saves Snack Manufacturer $1 Million Annually, Reducing Discards by 30%

Background

Adams Johnson manufactures therapeutic drugs for patients with immune system deficiencies. Employing nearly 1400 people, AJ has grown since its establishment in 1995, supplying its products to hospitals and patients worldwide.

The Challenge

By 2004, AJ needed to speed up its batch production and reduce its discard rate, as product demand had grown significantly. However, the company faced challenges with its automated powder delivery system, which had been purchased from an existing product line. "The machinery we had in place just wasn't the right tool for the job. The filter aid we add to our product is a fine powder, and the delivery system was meant to deliver materials of other consistencies," said Manufacturing Director, Jeff Williamson.

Delays Due to Clogging

The delivery system was constantly getting clogged with the fine filter aid powder, leading to process delays and lost product. Williamson explained, "Once the powder delivery starts, we have 3 hours to complete it and send [the product] to the filter press. After 3 hours, particulates can form and we have to discard the whole product batch." In 2004, the plant was discarding 3 out of 40 batches per month, a rate of 7.5%.

Engineers tried to fix the problem with mechanical devices to spray air into the machine where clogging occurred. Though the sprayers helped somewhat, they did not fix the problem altogether, and troubleshooting took manpower away from other parts of the process.

Decommissioning the Equipment

Eventually, management decided to decommission the entire machine in favor of having technicians manually add the filter aid powder and fill out the associated paperwork by hand. This lead to many problems. Now, documentation was inconsistent (the rest of the records were automatically recorded by the process control software). The Quality Department was not pleased about the possibility of mistakes and contamination. "It used to be a closed system. Now the tanks were being opened by technicians to add these giant containers of powder. We couldn't have that long-term."

The Solution

Engineering management decided that there had to be a solution that allowed for steady, automated filter aid delivery. They checked with a few different vendors who create custom products, one of which was IPC. “IPC had the most experience with this type of powder delivery," said Williamson. "The big plus for us what that their engineers had worked with the process control software we use."

The company ordered the automated powder delivery system, but it could not be installed until 6 months later, during the next planned shutdown. Williamson noted that "They were able to get the equipment installed and they worked with our controls team to make sure the software worked with the hardware." Through simulation testing, the controls issues were resolved, and the line was able to start up on time.

The Result

$1 MM Savings Through 30% Less Product Discards

Use of the new system lead to a 30% reduction in batch discards per month, resulting in an annual savings of approximately $1 million. The new system delivers filter aid powder steadily from start to finish, without clogging. In the first year of production with the machine, no product batches were discarded as a result of filter aid delivery delays. "Needless to say, cycle time for that process step decreased significantly."

Decrease in Process Deviations

With the automated equipment, technicians were no longer interacting with the system and documenting records of this process step by hand. This lead to a decrease in both documentation errors and batch record review time. According to Williamson, "Our batch records are reviewed much more quickly when personnel don't have to switch between reviewing the electronic records and the manual records."

Better Customer Audits

Quality management noted another positive result: audits went more smoothly with the automated system running. "We've always been dedicated to quality, and the seamless batch records allow us to show that to our auditors clearly," said Quality Director Adam Turley. "The regulatory affairs team feels confident showing auditors batch records that are electronic and in one piece."

Quote at the bottom in a box:

"Now that we have filter aid delivery streamlined, we are working with IPC to see where else in the process we can reduce cycle time and increase revenue."

Sidebar Copy:

Customer Details
Adams Johnson

Industry
Pharmaceutical

Challenges
Process equipment caused bottlenecks and discards

Solution
IPC customized equipment

Benefits

Savings of $1 M annually
Reduced discards
Decreased cycle time
Decrease in process deviations
Improved quality audits