

Dryer Upgrade Enhances Production at Lakeland Facility



Overview

Lakeland Dairies is a co-operative operating across the northern half of Ireland, producing about 1.8 billion liters of milk annually, making them one of the largest dairy co-ops in the country. They process fresh milk into a variety of highly functional powdered ingredients as well as value-add consumer dairy products which are sold both domestically and internationally.

In 2015, a RELCO® wide-body dryer with an integrated fluid bed and vibrating external fluid bed was commissioned at Lakeland's Baillieborough facility. This dryer has a capacity of 7,000 kg of powder per hour (over 15,000 lb/hr) and operates around the clock for more than 7 weeks at a time without interruption. Upon installation of the RELCO dryer, this site saw a 45% increase in annual production, equivalent to about 50,000 tons of milk powder, as compared to previous years. It also allowed the facility to process a wider variety of powders such as fat-filled, skim, and instant whole milk powder.

In 2019, a retrofit was needed for an existing evaporator at another facility. The upgraded multi-pass evaporator gained the ability to operate as a milk pre-concentrator and finisher, and featured a new pre-heating infusion system for improved product bacteriologic quality. The final result was greater evaporator flexibility, increased production variety, and higher-quality final products.

When an existing competitor's dryer at the Baillieborough facility was not meeting Lakeland's standards in 2021, they again turned to the RELCO team for an innovative solution.

Objective

The existing spray dryer's performance paled in comparison to that of the RELCO wide-body dryer commissioned in 2015, so Lakeland sought a complete design upgrade. The spray dryer was struggling to switch between production of one product type to another, limiting the product variety output from the Baillieborough facility. It also required more frequent cleanings and was prone to fluid bed blocking, leading to shorter run times, process upsets, and overall poor product quality.

Solution

The RELCO team worked closely with the customer on a design proposal to retrofit the spray dryer to meet the processing performance of the RELCO wide-body dryer. The design included the addition of an internal fluid bed to offer more control over production, as well as sanitary thermal insulation panels for greater energy efficiency.



Achievements

Following the retrofit, the spray dryer is now able to turn around a variety of products at increased performance efficiencies and fewer production upsets. The complete project started with a conceptual design, that the competitor was unable and unwilling to provide, and ended in on-site execution. Close cooperation with the customer allowed the team to understand their needs in-depth and in turn provide the most cost-effective solution.

The newly upgraded spray dryer and the wide-body dryer are expected to significantly increase annual production volumes and allow for broader product varieties at this facility. Lakeland now benefits from longer run times, greater product output, fewer product quality issues, and reduced process downtime.

Takeaways

After having built trust with Lakeland through successful project execution over the years, the RELCO® team was able to become the best choice to carry out a unique solution in this instance. KSS proves itself to be a preferred partner to customers such as Lakeland by remaining committed to meeting specific needs and driving innovation through separation technologies and decades of industry experience. This project enforces the team's ability to tackle system upgrades and retrofits through careful design considerations and attention to cost-effectiveness and sustainability.

The RELCO team at KSS is proud to have partnered with Lakeland Dairies on this successful retrofit and looks forward to future opportunities with this valued customer.



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