



Green Technology Accelerator Center

New York State Pollution Prevention Institute (NYSP2I) helps companies accelerate their introduction of green technologies into the market by identifying emerging market opportunities and providing assistance in a variety of areas.



EDG-trac Knife Advance System Performance Evaluation for Rotary Vacuum Filters

Client

Tristar, Ltd. is a manufacturer of fabricated components and equipment, including remanufactured filtration systems. The EDG-trac Knife Advance system (EDG stands for encoded digital guidance) is an ancillary system for a rotary vacuum drum filter (RVDF), which consists of an advancing knife, single motor gear drive, and associated controls. In the EDG-trac Knife Advance system, accumulated solids are cut away from the filter drum surface much more efficiently, while maintaining acceptable solids separation and improving liquid throughput.

Opportunity Areas

Remanufacturing is an important means of extending the life of a product and reducing environmental impacts. It was anticipated that, when compared to conventional systems, a remanufactured filter system, which incorporated the newly designed EDG-trac Knife Advance System, would use less energy and water, produce a drier sludge cake, and have a higher filtrate throughput. NYSP2I assisted Tristar with quantifying these improvements.

Objective

The goal of this project was to evaluate Tristar's EDG-trac Knife Advance System at a manufacturing facility and quantify energy reduction, suspended solid removal efficiency, and increased throughput for this system as compared to a traditional RVDF system.

Work Performed

NYSP2I performed a comparative analysis of the two systems at a chemical manufacturer who was replacing two traditional RVDF systems with two remanufactured systems built by Tristar. The performance of the traditional operating RVDF system and Tristar's remanufactured "EDG-trac" system was measured using the following key parameters: energy use, filtration rate, sludge moisture content, and effluent quality (suspended solids).

Results

The Tristar Edge-trac Knife Advance System, as installed in a remanufactured rotary vacuum drum filter, exhibited the following performance results as compared to a traditional RVDF system:

- 700% increase in water filtration throughput
- 87.4% reduction in energy use, on a per gallon filtered basis
- Comparable sludge moisture content and suspended solids removal efficiencies
- Tristar is targeting the creation of 5 NY State jobs to expand manufacturing of EDG-trac.

