Application Brief

A chemical manufacturer of Dry Catalyst, used in the Fluid Catalytic Cracking process, transfers the finished product 100’ up from the ground into the top of storage silos via a blower. A single pipe branches into six transfer lines, known as the “spider”, where operators open and close valves to select which silo the product goes into.

The Challenge

Knife gate valves currently installed on the ‘spider’ only last about 6-8 weeks before the packing needs to be replaced which takes approximately two hours per valve. The catalyst is a very dry product and the traditional packing wears quickly and then allows the catalyst to blow past the gate onto the top of the silo. Buckets were used to collect the wasted material and a sprinkler system to help deal with all the dust created.

The Solution

An Elite Valve E5600 knife gate valve, with dual transverse seal design, was installed on one of the ‘spiders’ for evaluation. After 36 weeks, it was still operating without any product leaking past the gate due to the robustness and high-performance sealing of the transverse seals. Elite Valve also provided a customized actuator to accommodate the tight space requirements of the application.

The Result

The Elite Valve E5600 has proven to be a cost-effective solution by drastically reducing the process downtime required to change the packing on the previous valves. Downtime is approximately $15K per hour resulting in savings of $160K per year, per valve. There are six knife gate valves on each ‘spider’ application so total annual savings is $960K.

Dry Catalyst transfer to storage silos

Louisiana
USA

Chemical Industry

E5600 Knife Gate Valve

Frank
Unit Foreman

“The E5600 has exceeded all expectations on this application. I want all my knife gates to be red!”

EliteValve
elitevalve.com