A Counter-Cyclonic Dust Collection System

Aerodyne has installed a new dust collection system for a manufacturer of specialty industrial chemical products for a unique project in which multiple attempts at efficient dust collection had previously failed. The chemical plant's proprietary process, which yields a highly valuable powdered nutritional supplement, had several challenges which led plant managers to seek a better solution.

During the plant's process, raw material is pneumatically conveyed through a flash dryer and then mixed downstream with another additive to create the final product. The product is ultimately captured by a dust collector and packaged for use.

When the company contacted Aerodyne, the plant was using a baghouse dust collector to catch its final product. While collection efficiency was adequate, the high volume of material processed daily created a maintenance nightmare. As the baghouse filters became blinded, inefficiencies in the system caused inconsistent batches and wasted valuable raw materials.

Prior to the baghouse, the manufacturer had used a bank of four cyclones to capture the product. Due to the extremely fine nature of the dust, these cyclones provided poor dust collection efficiency, resulting in wasted product.

Aerodyne assessed the company's situation and determined its SplitStream dust collector would be an ideal fit for the large dust volumes and high collection efficiency required for the process. The SplitStream is a mechanical "counter-

cyclonic" dust collector.

Unlike conventional cyclones, the SplitStream utilizes a powerful secondary air stream that protects the inner walls from abrasive wear and directs incoming dust toward the collection hopper. This unique design yields higher collection efficiency than traditional cyclone dust collectors and allows the unit to be installed in a horizontal or vertical configuration, without reducing efficiency.

Because the SplitStream dust collector does not use filter bags or cartridges, it can easily handle high dust loads with minimal maintenance. An added benefit for this customer's process was the ability to use ambient air for the secondary air stream. This aided in cooling the final product, a requirement for consistent batches and superior quality.

For more information, please email dc@dustcollectorhq.com *[1] or visit* www.dustcollectorhq.com *[2].*

Source URL (retrieved on *04/01/2015 - 1:33pm*):
http://www.chem.info/articles/2011/10/counter-cyclonic-dust-collection-system?qt-most_popular=1

Links:
[1] mailto:dc@dustcollectorhq.com
[2] http://www.dustcollectorhq.com/