

Case history

Removing grain dust

Company installs new dust collection systems to help control grain dust.

Viterra, based in Regina, Canada, a grain supplier and processor, operates two grain terminals in the Port of Vancouver, BC — the Cascadia terminal and the Pacific terminal. The Cascadia terminal has 282,830 metric tons of licensed storage space and 210,000 metric tons of working space and handles many various grains, oilseeds, and processed products, including wheat, durum, feed barley, malt barley, canola seed, and pelleted screenings. Cascadia operates on a continuous basis, 24 hours per day, 7 days per week and has two parallel railway tracks for receiving grain and one berth for loading grain onto vessels.

The Pacific terminal has 135,000 metric tons of licensed storage space and 110,000 metric tons of working space and handles mostly pulse crops, oilseeds, and processed products, including canola seed, lentils, flax, peas, and pelleted screenings. Pacific operates on a continuous basis, 24 hours per day,

5 days per week and has three parallel railway tracks for receiving grain and one berth for loading grain onto vessels.

Both terminals have receiving systems, several material handling systems, cleaning systems, pellet production systems, storage capabilities, and shipping systems, and both plants require dust filtration on all of these systems, and equipment.

Old dust filtration systems cause problems

The original dust filtration systems were installed in the 1970s and used large shaker-style baghouses. The age and style of the systems presented several risks, including the worn condition of the older equipment, the low filtration efficiency by current regulatory standards, and the difficulty of replacing obsolete key components in the shaker mechanism. Plant downtime associated with this system resulted in a shutdown of



Viterra's Pacific and Cascadia terminals process a wide range of grain products, which generate a lot of dust that needs to be contained and collected.

the entire facility. The older systems were well beyond their design life, and both facilities were experiencing operating problems. These problems prompted Viterra to look for a new filtration solution that would maintain acceptable dust levels and reduce plant downtime.

After researching several different options, Viterra decided to go with new dust collectors from Schenck Process, Kansas City, MO. Viterra hired a mechanical engineering team to design the new filtration systems, including the pickup points, the ducting design, optimized fan sizing, and filter requirements. The engineering team then sent the supplier an initial list of design requirements for the dust collectors and worked closely with Schenck on the specific design of the entire system and each collector.

Once the initial design was complete, a full shop-drawing review process was completed by all parties to ensure that the equipment was designed correctly. The supplier communicated with Viterra for scheduling updates

throughout the manufacturing process. Viterra has installed 13 MCF PowerSaver dust collection systems at the Cascadia terminal and is currently installing another nine systems. The company has installed 10 MCF PowerSaver systems at the Pacific terminal.

“All the systems at both the Cascadia and Pacific terminals arrived on time and within the agreed upon schedule,” says Christina Proseilo, project manager at the Vancouver terminals. “I can’t comment on schedules from other dust collection manufacturers, but other equipment manufacturers don’t have the same track record with us as Schenck Process when it comes to on-time deliveries.”

Better dust collectors, better results

The installation of the dust collectors has allowed Viterra to optimize the use of high-horsepower fans and power down other fans when collectors were not in use, something the company was previously unable to do with a single dust collection system in each

terminal. In addition to being a more efficient process, this change has provided power and cost savings.

“Our technical review indicated that the MCF’s were the easiest and lowest-maintenance-cost system available in the market,” Proseilo says. “The systems also have the ability to standardize on sizes to optimize spare parts requirements. Although each supplier had benefits, we believed the medium-pressure filter-cleaning system to be superior to the others considered. Some other benefits included the mass discharge option for discharging the collector.”

The new systems save on operating costs because each system’s integrated cleaning air blower provides 0.49-bar medium-pressure air for filter cleaning, which eliminates the need for expensive plant compressed air.

“Schenck’s service support has been very prompt and reliable,” Proseilo says. “They can be contacted at any time and are willing to offer their support and vast knowledge of their product.”

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Note: Find more information on this topic in articles listed under “Dust collection and dust control” in *Powder and Bulk Engineering’s* article index in the December 2016 issue or the Article Archive on *PBE’s* website, www.powderbulk.com. (All articles listed in the archive are available for free download to registered users.)



Viterra installed MCF Powersaver dust collection systems at two grain processing terminals to improve their dust collection process.

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