89% Decrease in Dust Generation

Industry
Coal Fired Power

Application
Two 1-on-2 transfer chutes feeding coal to the power generation boilers

Material
North American Powder River Basin Coal

Objective
- Improve air quality by reducing dust generation
- Meet the United States Occupational Safety and Health Administration (OSHA) respirable dust level requirement

Transfer Detail
(2) 1-on-2 transfer chutes with diversion, 60" belts; each chute transferring 1,500 tph for a total of 3,000 tph on the receiving belt
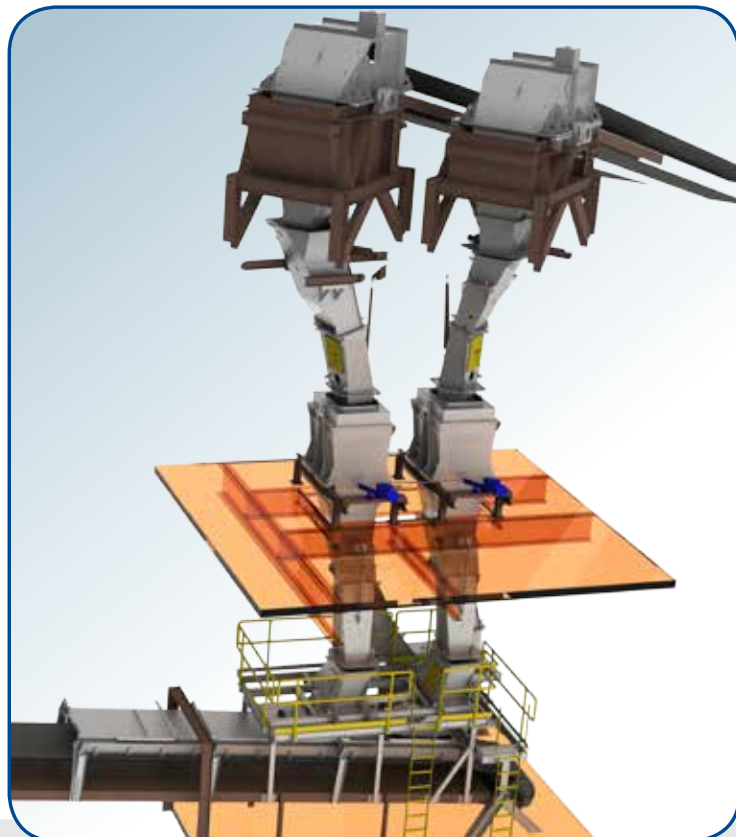
Challenge
The existing transfer chutes in this North American coal-fired power plant were experiencing dust generation levels that were too high and were violating the OSHA (Occupational Safety and Health Administration) allowable standard for respirable dust. In addition to not meeting regulations, it was causing a health hazard for the plant workers.

Tasman WARAJAY TECHNOLOGY

Flexco Solution
Flexco designed new systems that utilized low-impact angles so that material is gently redirected rather than being severely impacted throughout the transfer process, thus reducing material degradation.

The material stream is encapsulated by the wear surfaces, which keeps all the fines entrained within the flow. The result is minimal dust generation for the plant.

As part of this chute project, the customer performed dust testing of the old system and the new Flexco system to verify system performance. Time weighted averages (TWA) for all sample points on the new system were well below that of the old chutes and OSHA respirable dust standards.

Result
In the critical area for dust, the pre-installation TWA was 3.466 mg/m^3 and the post-installation TWA was 0.393 mg/m^3. This represents an 89% decrease in dust generation. There are no dust suppression or collection systems in this installation so the improved performance is attributable to the Flexco Transfer Chute design.