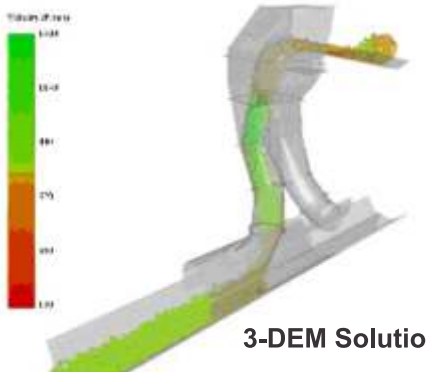
ASGCO Complete Conveyor Solutions

3-DEM Solves a Major Transfer Chute Problem at Northeast Coal Fired Power Plant

Industry	Coal Fired Power Plant
Application	Coal Transfer point on Stacker / Reclaim system
Material	Bituminous Coal 1" minus
Product	3-DEM Chute Design, Fabrication and Installation
Objective	Eliminate chute plugging and overloading during upset conditions.
Detail	Bypass conveyor is a 42" wide at 700 FPM and 1400 TPH and the receiving conveyor is a 60" wide at 850 FPM and 3000 TPH

Challenge

This transfer point was a major problem area for the coal yard. While in reclaiming operation, the chute would build-up and plug when running wet coal or during freezing conditions. Chute heaters, vibrators and internal baffles were added, but the problem still remained. Due to the angle of discharge onto the 60" receiving conveyor, off center loading caused serious belt mis-tracking and constant spillage.



3-DEM Solution

Solution

A new transfer chute was modeled and designed using 3-DEM, to allow the coal to be loaded onto the receiving belt, moving in the same direction, speed and in the center. The design of the new chute also eliminated corner build-up and reduced wear due to impact and mis-direction. The adjustable upper deflection hood was power actuated to prevent a chute overload when the upset condition, reclaiming while stacking out was occurring. The hood was automatically positioned in the head chute to direct the coal during either stack out or reclaim. This prevents a chute overload during the upset condition.

Results

The new transfer chute now operates without build-up and the coal is center loaded onto the 60" receiving belt at the same speed and direction. This reduces wear and belt mis-tracking as well as fugitive dusting and spillage clean-up. There is no longer a need for chute vibrators and the plant has still not re-installed the heaters. ASGCO has once again provided a "Complete Conveyor Solution".