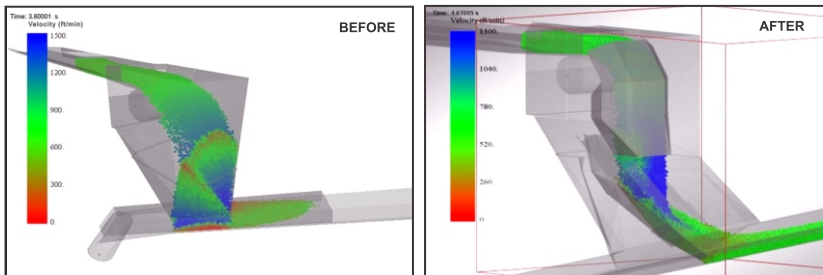


## Improving Conveyor Belt Tracking and Reducing Airborne Dust on a Redesign of a PRB Coal-Fired Power Plant Conveyor Transfer System

<b>Industry</b>	PRB Coal Fired Power Plant	
<b>Application</b>	Underground 72" Conveyor Transfer Chute and Load Zone	
<b>Material</b>	PRB / Sub-Bituminous Blend of PRB Coal 3" minus	
<b>Product</b>	3-DEM™ Chute Design, Fabrication and Installation	
<b>Objective</b>	Improve material flow, reduce airborne dust, eliminate off center loading and cover wear on the receiving belt.	
<b>Details</b>	<b><u>Conveyor #1 (Feed Conveyor)</u></b>	<b><u>Conveyor #2 (Receiving Conveyor)</u></b>
	Width: 72" / 1800mm Speed: 650 FPM / 3.25 m/s Incline: 0 deg TPH: Variable 0 to 3500	Width: 72" / 1800mm Speed: 650 FPM / 3.25 m/s Incline: 14.1 deg TPH: Variable 0 to 3500



### Challenge

This transfer point was a major problem area for the PRB 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.

### Solution

The existing transfer chute was modeled and re-designed using ASGCO®'s 3-DEM™ material modeling software, to allow the coal flow to smoothly transfer from the supply conveyor to the center of the receiving conveyor. This new design eliminated the off center loading conditions due to the varying coal load which cause belt mis-tracking and material spillage. The new design loads the coal onto the receiving belt directly in the center and flows in the direction of belt travel. Airborne dust and spillage is virtually eliminated with this new design. Clamp-Mount skirting, dust curtains and Slide-N-Roll support beds further aid in the elimination of any fugitive dust and carry-back and helped make this project a great success.



### Results

The new transfer chute now operates without build-up and the PRB 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".