



PROBLEM SOLVED™ PAPER

SOLUTION: Martin® Inertial Flow™ Transfer

INDUSTRY: Coal-Fired Power

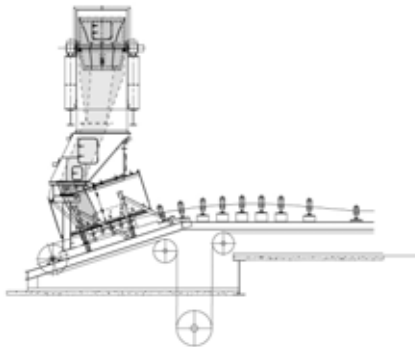
LOCATION: AmerenUE Meramec Plant
St. Louis, Missouri (South, on the Mississippi River)



The AmerenUE Meramec plant is a four-unit, 865MW facility fired with PRB coal.



The Martin® Inertial Flow™ Transfer has doubled the material flow rate while reducing the dust level by over 98%.



Material analysis and study of the flow requirements led to this design for the Martin® Inertial Flow™ Transfer installed at the AmerenUE Meramec Plant.

PROBLEM

The transfer chutes of these redundant systems would choke, cutting coal flow to 550 tph, roughly half the system's design capacity. This required the operation of both twin bunker feed conveyors on longer schedules without allowing for system maintenance. In addition, the transfer points created large quantities of coal dust, creating a fire hazard and maintenance headache.

SOLUTION

In a **Martin® Inertial Flow™ Transfer**, a “clamshell” or “hood” controls the flow of material from the discharging conveyor, maintaining a coherent material stream and minimizing induced air. A “smooth line” transfer chute or “spoon” lays the stream of material onto the belt at the proper speed and angle and without impact, to minimize material degradation, belt abrasion and the expulsion of airborne dust.

To improve dust control, the system incorporates dust curtains at the exit to slow air movement and minimize dust escape. By controlling the flow of material, the engineered chute eliminates blockages, shapes the load and minimizes the creation of dust.

RESULTS

The **Martin® Inertial Flow™ Transfer**, was engineered and modeled to provide the proper flow rate, eliminated the bottleneck and allowed the plant's production material handling rate to climb nearly 50 percent to reach its 1000 tph design capacity. The system also improved the plant's dust control by reducing the amount of material lost by over 98 percent, while allowing a significant reduction in the amount of dust suppression chemicals applied.