Continuous Flyash Removal with the New Airslide® to Pump System

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ABSTRACT:

Westar Energy installed a continuous flyash removal system on Unit 1 at Jeffrey Energy Center (JEC), located near Saint Marys, Kansas. The new system uses a network of gathering Airslides®, with connections to each precipitator hopper, to continuously remove the flyash simultaneously from all hoppers. A Fuller-Kinyon™ (F-K) pump, serving as a 'line charging' device, transfers the collected flyash to the Unit 1 ash silo via pressure conveyance.

The new equipment is scheduled to commence operations in October 2006. Installation requires the removal of the existing vacuum valve and installation of new Airslide® inlet sections at each hopper outlet. Flyash collected in each hopper falls by gravity into the gathering Airslides®. Since flyash does not accumulate in the hoppers, there is little opportunity for the flyash to plug, build-up, or bridge over in the hoppers. The Airslides® deliver flyash to Fuller-Kinyon™ pumps. Using a pressure-based conveying system, the F-K pumps utilize the existing vacuum piping to transfer ash to the silo.

The Airslide® to Pump system (A2P™) has only one moving part, the pump screw, that comes in contact with the fly ash during operation. Two redundant pumps are installed to allow continuous A2P system operation when a pump requires maintenance.

JEC controls the new system with an updated and simplified version of their existing DCS. Since the A2P™ system has no sequencing valves, I/O count is reduced when compared with their older vacuum system, further contributing to a low cost and schedule sensitive system retrofit.

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