

COAL-FIRED POWER PLANT REDUCES WATER USE BY 50% AND IMPROVES WORKER SAFETY WITH NEW WASHDOWN NOZZLES



PROBLEM:

Removing dust from transfer conveyors and tunnels was proving challenging for one coal-fired power plant in the southeastern US. Spray nozzles were being used for washdown but didn't provide adequate impact and coverage for complete dust removal despite using high volumes of water. Every night, after the washdown process ended, workers with hoses would manually clean hard-to-reach and heavy accumulation areas. In addition to incomplete cleaning, the current washdown process created a safety hazard. The nozzles flooded the conveyors and large volumes of water would cascade down to the areas below the washdown zones and create a slip/fall hazard for workers.

SOLUTION:

We recommended replacing the existing washdown nozzles with TankJet® nozzles, a combination of fluid-driven rotating nozzles and fixed nozzles. TankJet 6353 and TankJet 80 nozzles were strategically placed to ensure efficient, coverage of conveyors and tunnel walls. Since the installation of the new nozzles, the flooding and worker safety issues have been eliminated and additional manual cleaning is no longer required.

RESULTS:

The new approach to washdown has yielded many benefits for the power plant. Water use has been reduced by 50%, a result of replacing flooding nozzles with more efficient nozzles and eliminating additional cleaning by workers using hoses. The estimated savings on labor alone is estimated at US\$150,000 per year. In addition to the labor savings, the plant is benefitting from lower wastewater treatment costs and energy savings from the use of smaller pumps to supply the nozzles. Most importantly, the slip/fall hazard has been eliminated.

**BETTER
CLEANING
USING LESS
WATER;
NO MANUAL
LABOR**





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