

CASE STUDY

ChemTreat FGD1105 Provides Significant Operational Savings and Eliminates Handling Issues at Longview Power

Background

A 770 mW supercritical Northern Appalachian bituminous coal fired power plant had consistent problems handling and feeding dibasic acid (DBA) to their FGD wet limestone scrubber system. The plant was also concerned with delivery constraints on the DBA. ChemTreat FGD1105 (patent pending) improved SO₂ scrubbing efficiency, so that the plant stayed compliant with their SO₂ stack emissions.

Keeping SO₂ levels down in scrubber systems can be challenging, particularly when the sulfur levels in the incoming coal vary.

Solution

The plant added FGD1105 to the scrubber absorber tank and the SO₂ level dropped significantly. The SO₂ drop was so impressive that the plant turned off one absorber recycle pump and observed only a slight rise in SO₂ in the stack gas (120 pounds per hour to 200 pounds per). The plant then turned off a second recycle pump and observed the SO₂ rise to a level still lower than it was prior to adding the FGD1105.

With a freeze point of -11°F, FGD1105 presents no handling issues. It is readily available in bulk or tote delivery.

Results

The plant experienced better SO₂ removal performance than ever achieved before. It reduced limestone usage by three percent to date, and projects a 10 percent reduction once system improvements are fully implemented. The station is improving system chemistry control by moving to continuous feed of FGD1105 and adjusting pH controls. Reduced limestone will save the plant \$500,000. Additional savings are expected because of reduced hauling costs, maintenance, and wear on the ball mills and lime slurry equipment.

Improving the scrubbing efficiency enabled the plant to reduce the liquid-to-gas ratio in the scrubber system, reducing the number of absorber recycle pumps from five to four. This saves the plant an estimated 3 mW in electrical load, an additional \$734,400 per year in reduced operating costs. In total, the plant estimates that FGD1105 has the potential to lower their annual operating costs by over \$1,200,000.

When a maintenance issue occurred with a recycle pump, the plant operated with only three pumps running and without coming off full load thanks to the improved scrubbing efficiency of FGD1105. The product provided operational flexibility with the absorber recycle pumps, reduced maintenance costs, and eliminated the maintenance associated with line and DBA-associated pump pluggage.

In total, the plant estimates that FGD1105 has the potential to help lower annual operating costs by over \$1,200,000.

Results are examples only. They are not guaranteed. Actual results may vary.