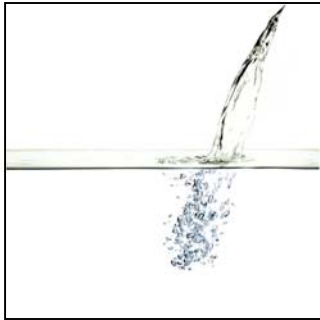


Customer Uses GE Chemicals to Reduce Solid Waste at Gypsum Plant by 645 Tons per Day



Challenge

A large diversified energy company located in the Midwest, USA, has a commercial business at one of their power plants that produces about 2,400 tons per

day of high-quality gypsum – a soft, white mineral, which is sold for use in manufacturing wallboard.

Producing high-quality gypsum requires the removal of several unwanted byproducts; chief among these are silica, iron, and aluminum oxide. The importance of removing the byproducts is crucial because the gypsum must maintain a purity of 95% in order to be sold to produce wallboard.

The customer's existing gypsum removal process, called Flue Gas Desulfurization (FGD), involved the depositing of the unwanted byproducts into a waste water pond. When the pond reached capacity, which was every four months, the customer had to remove the solids and ship the refuse to a landfill. The existing FGD process was both environmentally and financially draining, producing a large amount of sulfur and costing the customer millions of dollars.

Additionally, a fair amount of gypsum was being lost in the existing process, further increasing overall production costs. The customer needed a chemical control system that would enhance the performance of the existing FGD process by reduc-

ing the amount of sulfur, and thus the massive amount of water produced.

Solution

Following a comprehensive analysis of various treatment options, the customer turned to GE, who supplied a polymer and biocide chemical that treated the water produced during the FGD process. The chemical polymer, when mixed with the thickeners in the FGD process, caused the solids in the gypsum mixture to settle more efficiently while the biocide prevents the solid mixture from turning septic.

Results

As a result of adding the polymer and the biocide to its FGD process, solids are being removed and the remaining purified water is returning to the FGD process without being wasted. Through this process, the customer is also producing a higher quality product and losing less gypsum during its FGD process.

GE's chemical solution has reduced the solid discharge at the plant from 2,400 to 645 tons per day, and the customer has reduced yearly impurity costs by 50%, while doubling its removal of solids.

The new solution has ensured that the customer is meeting all applicable environmental regulations. Because remaining wastewater is now returned to the FGD process. The customer is no longer depositing unwanted byproducts into the wastewater pond.

GE's solution has allowed the customer to maintain its commitment to conduct business with respect for the environment, while providing its customers with low cost, reliable, and efficient energy services.

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Find a contact near you by
visiting gewater.com or
e-mailing custhelp@ge.com.

Global Headquarters
Trevose, PA
+1-215-355-3300

Americas
Watertown, MA
+1-617-926-2500

Europe/Middle East/Africa
Heverlee, Belgium
+32-16-40-20-00

Asia/Pacific
Shanghai, China
+86 (0) 411-8366-6489

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