

Freeze Prevention Agent Protects Calcium Carbonate Storage Pile and Saves Mine US\$1 Million

Challenge

Calcium carbonate "flux stone" is used in the preparation of fluxed iron ore pellets at this Michigan mine. The flux stone is stockpiled outdoors. During winter months, the extreme cold and snow results in the flux stone freezing, making it difficult or impossible to reclaim and introduce it into the iron ore pellet manufacturing process. The frozen flux stone results in production slowdowns or plant shutdowns for hours until the problem is corrected by mechanically breaking up the frozen mass of calcium carbonate.

Solution

GE Water & Process Technologies designed and installed a chemical feed system for applying DusTreat* FP9133, a freeze protection agent, to the flux stone as it is being loaded onto the outside storage pile. The treatment product is distributed from a bulk storage tank using a chemical metering pump and spray nozzle arrangement that automatically applies it at a transfer point prior to stacking.

Results

Since the DusTreat FP9133 treatment was initiated two years ago, there have been no production losses due to frozen flux stone. The net savings to the plant from increased production are estimated at close to US\$1 million annually. Moreover, there have been significant additional savings due to a reduction in the manpower previously required to break up the frozen flux stone and remove chunks of frozen material obstructing handling equipment.



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