

Chemical Manufacturer Saves Production Loss Using Mobile Treatment System for Repairs

Challenge

A large gulf coast chemical manufacturer obtains water from a local river to support utilities and process needs such as cooling, steam generation, and process water. The river water requires clarification, the removal of suspended and colloidal matter from the water, as the first and most critical treatment step. The plant uses a solids-contact settling type clarifier, operating at 2,500 gpm (568 m³/h) with peak flow rates to 3,200 gpm (727 m³/h). This system was due for major maintenance during the next plant production outage, but an unexpected failure of the sludge rake drive system occurred prior to that time, requiring emergency repairs were within days to avoid production loss for lack of treated water.

Solution

The maintenance project required the clarifier system to be shut down during repairs, resulting in lost plant production. GE supplied a temporary trailer-mounted filter system to operate during the repair outage so that production of clarified water needed for the utilities and process could be maintained during repairs. The system was comprised of eight MobileFlow* trailer-enclosed filter units (Figure 1), each containing six pressure vessels loaded with dual media. A coagulant chemical was added to the system influent, filtration occurred in down-flow mode, and periodic backwash was performed to remove suspended solids to waste. Field Service Representatives supplied by GE operated the temporary treatment system so that the customer personnel could concentrate on the repair project.

Results

The repair work took ten days, during which the temporary filter system produced over 40 million gallons (151,000 m³) of clarified water to meet the plant's production requirements and contractual commitments to the neighboring plant. Ten days of production loss and millions of dollars were saved by use of the mobile treatment system, in effecting the repairs without a plant shutdown.



Figure 1: MobileFlow trailers used during 10-day plant repair work



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