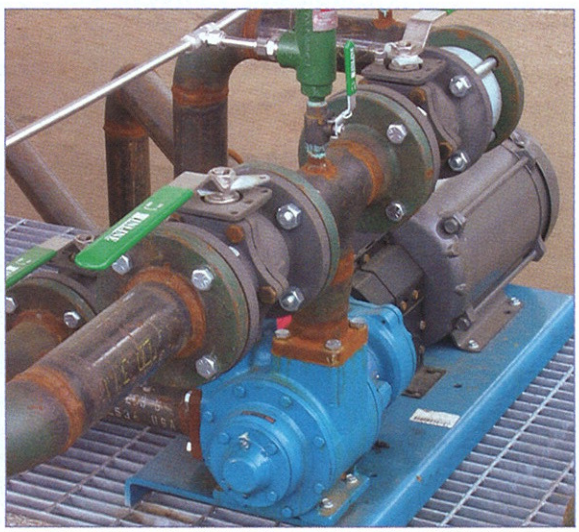
Safety-first is critical for fluid transfer in chemical tank redesign

A redesign of a US chemical tank farm handling volatile, highly flammable and combustible chemicals demanded the implemention of highly reliable transfer pumps. The volatility of their products meant there was concern as to how the pumps would run and, more importantly, shut down. The company approached Blackmer for a solution.

Callan Chemical a US distributor of volitile, highly flammable and combustable chemicals, recently redesigned its facility in Walpole MA. Working with chemicals such as acetone, methyl ethyl ketone (MEK), ethyl acetate 99, isopropynol 99, toluene, mineral spirits (used to make lighter fluid), textile spirits, heptane, 142 solvent and hexane, Callahan needed highly reliable transfer pumps with high suction lift capabilities and explosion-proof motors. To meet both their safety and performance needs, Calahan selected Blackmer GX2.5B series sliding vane pumps.

"Because of the volatility of the products Callahan handles, there was a lot of concern as to how these pumps would run and, more importantly, shut down," commented Mike Trask of Hall-Trask Equipment Co., a Blackmer distributor that assisted in the tank farm redesign. "All of the safeties had to be put in place for high-level loading and off-loading. It's critical that these pumps perform as specified for the safety of the operation."

In addition to self-priming, high suction lift capabilities and explosion-proof motors, Blackmer GX Series pumps provided Callahan with the benefits of reliable continuous transfer of chemicals from storage tanks, line stripping and heel removal capabilities from rail and transport tankers. The GX pumps also provided Callahan integral head-mounted gear reduction drives with oil-lubricated, hardened helical gears for quiet trouble-free operation. In addition, the gear shafts are supported at both ends by ball bearings for both smooth operation and long life.



Callahan Chemical selected Blackmer GX Series sliding vane pumps due to their ability to maintain near original volumetric performance levels over a long period of time, high suction lift capabilities and explosion-proof motors.

Setting the levels

Of course, with a project this large and involved, adjusting on the fly is not out of the question, and new or modified ideas were definitely in play at the Callahan site.

"The pumps are designed and integrated to high-level detection and scales at the site," explained Trask. "You set a scale weight and when that weight is hit, the pump shuts down. A high-level probe also goes into each truck that will shut off the pumps, as well. The pumps are also designed to pump onto and off of transport and when they're pumping off we have high-level detection there, to shut the pump off when it reaches a predetermined level."

"Every project has its difficulties," Trask admitted. "As the customer went into the project, he added, removed, increased and decreased what he needed on the site, so this was not a cookie-cutter operation. It's basically a custom layout

Since the redesign, and the utilizing of Blackmer GX Series sliding vane pumps, the Callahan Chemical facility has been operating at full capacity.

The Blackmer GX Series delivers flow rates between 40 and 528 U.S. gpm and are available in port sizes from 2 inches to 4 inches. It also provides smooth, sliding vane action with Unlike other positive displacement pump technologies that suffer from volumetric inefficiency as they wear, GX Series pumps use self-adjusting vanes that allow the pumps to maintain near original volumetric performance levels over time.