

Oil & gas

Meeting regulations at a propane facility

A gas bulk plant in United States required a valve upgrade to meet new fire and safety regulations. The company took this opportunity to commission the design and installation of new motors, tanks and sliding vane pumps as well. Since installation, the modernised plant now produces propane more efficiently and cost-effectively.

New regulations

When the US National Fire Protection Association's (NFPA) Section 58 safety regulation came into effect on 1 July 2011, PirkI Gas Inc, based in Owatonna, Minnesota US, knew that an upgrade to its propane facility was necessary. The new regulation dramatically alters the types of equipment that can legally be used in propane-gas systems, requiring all bulk-storage tanks with a volume capacity of more than 4,000 gallons (15,140 litres) of water must have their storage tanks fitted with either internal valves or an emergency shutoff valve. PirkI Gas decided that if a valve upgrade was required, why not just

install new pumps and motors, or even add new tanks, as well?

Facility upgrade

With the NFPA regulation deadline looming, PirkI turned to LPG & NH₃ Supply, Inc in Buffalo, Minnesota, for the design and installation of the equipment which would help modernize the PirkI Gas bulk plant.

Due to the facility's tendency to flood, the first order of business was raising the tanks off the ground and placing them on piers, before installing two new storage tanks. In order to increase the speed of the bobtail-loading process, three pumps

were included in the system to raise the loading capacity. The three pumps have a combined capability of pumping 525 gpm, lowering PirkI's overall loading times from 40 minutes down to 13 minutes on its 5,000-gallon trucks. PirkI gas can now turn over its product three times faster than it had been able to in the past, increasing the amount of propane it can sell in a shorter period of time.

To ensure that the new loading areas would function at maximum efficiency, LPG & NH₃ Supply recommended the installation of Blackmer 3 in LGL sliding vane pumps. Features of the LGL Series pumps which make it suitable include their cavitation suppression liners which reduce noise, vibration and wear; replaceable casing liners and end discs; ductile-iron construction with internal relief valves; self-priming and dry-run capabilities; and vanes that can be replaced without removing the pump from the piping system.

"The Blackmer pumps have been a tremendous improvement to our bulk plant. They are reliable, very quiet and, thanks to their efficiency, have improved our load times dramatically," says Greg PirkI, president of PirkI Gas Inc.

Results

The result is a modernized-bulk plant which is the epitome of fast, efficient, cost-effective operation. Three Blackmer LGL 3 in pumps with 15-horsepower motors and enhanced RPMs were installed. An outside firm was



Figure 1. Since the installation of Blackmer 3-inch LGL sliding vane pumps overall loading times at the gas bulk plant are down from 40 minutes to 13 minutes on its 5,000 gallon (18,900 litres) trucks.



Figure 2. Greg Pirkl, president of Pirkl Gas Inc activates the shutoff valves at his recently upgraded bulk plant.

used to add more openings on the tanks so there is now a high-speed loading bulkhead off the tail of two tanks with two 3 in loading

lines and one vapour line. On the tanks other end is a lower-speed bulkhead with one 3 in loading line and one 3 in Blackmer pump

with a 15-horsepower motor. The pumps on both ends are geared to pump 175 gallons (662 litres) per minute. The two pumps running in tandem at one end are capable of producing a combined loading capacity of 350 gpm (1,324 lpm) at that end.

In addition to the LGL stationary pumps, Pirkl Gas specifies TLGLF3 pumps on its rolling fleet because they provide the required capacity and constant flow rates. They can also be used in tandem with Blackmer's 2 in external Bypass Valve, which increases their reliability and dependability. Pirkl's entire fleet has been built by Arrow Tank and Engineering, Co, Inc, Minneapolis, Minnesota.

"We always look to partner with companies that have the same values and drive that we have," said Pirkl. "The proof that our relationships with LPG, Arrow and Blackmer are paying dividends can be found in the success of our recent plant upgrades, as well as the reliability of our delivery fleet. These are relationships that we can also build on into the future."

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