As Seeler Industries' 3 Rivers Terminal continues to expand, a wide variety of pumps help eliminate the growing pains

Terminally successful

The 3 Rivers Terminal, strategically located southwest of Chicago, consists of 17 storage tanks and 15 blend tanks used in the storage, handling and packaging of mainly hydrogen peroxide, but also caustics, amines (a derivative of ammonia), glycerin propylene, glycol and chemical de-icers. of hydrogen peroxide.

This for-hire terminal facility currently provides storage, transfer and packaging services to the chemical industry for both bulk liquid and dry chemicals in truck and rail quantities.

To accommodate its constantly growing customer base the 3 Rivers Terminal is served by seven truck-loading racks and 42 railcar-unloading positions.

These racks and railcar positions also enable the terminal to offer transloading services to its customers, allowing loads that arrive via railcar to be transferred to tanker truck, and vice versa. An on-site truck scale ensures quick and efficient product handling coupled with accurate inventory control. The facility has a total storage capacity in excess of 650,000 gallons (2,460,500 litres).

(From left) Glen Gibisch of Seeler Industries, Ron Mirshak of Semler Industries, Bill Holmes of PSG and Loren W. Semler of Semler Industries (the Blackmer distributor involved in the project) all stand near storage tanks located at the 3 Rivers Terminal in Chicago

Minding the store

While hydrogen peroxide is classified as a weak acid, and is only slightly more viscous than water, its handling comes with a few cautions, namely that it can adversely affect pump seals, a crucial

> When we brought in a 3-inch C-Series pump it increased our unloading rate (from 45 gpm to 90 gpm) so that we doubled our capacity

GLENN GIBISCH, EXECUTIVE VP, 3 RIVERS TERMINAL

consideration when business involves the high-speed transfer of peroxide from one form of transportation to another, or into and out of a storage or blend tank.

When the 3 Rivers Terminal began operations it relied on air-operated double-diaphragm (AODD) and side-channel pumps that came from a wide variety of manufacturers. After several years of using these pumping systems, the older-generation and inefficient AODD and side-channel equipment were replaced with Blackmer STX3 and SNP3J sliding-vane pumps due to their energy saving characteristics.

These are constructed with 316 stainless steel for compatibility with chemicals, solvents, caustics, sulphates and many acids. The pumps are designed with non-metallic vanes that allow them to run dry for short periods, while also giving them self-priming and line-stripping capabilities. They also move product at a very safe rate of 200 to 250 gallons (757 to 946 liters) per minute.

The plant also employs Advanced Series AODD pump technology from Wilden, specifically, the 3-inch P1500 model that features polypropylene construction and PTFE diaphragms and ball valves. The Wilden AODD technology has been in operation for six months and is used to transfer various chemicals from railcars into and out of the blending barn.

To replace its side-channel pumps the terminal chose to introduce a C-Series eccentric-disc pump from Auxerre, France-based Mouvex.

Blackmer sliding vane pumps reduced Seeler's scale-to-scale window from 90 to 66 minutes and significantly reduced energy consumption

Lightening the load

A pivotal piece in the terminal operation is the loading arms that facilitate the loading and unloading of various vessels, as well as the transloading from one mode of transportation to another.

Since the OPW Single Arm Fixed Reach J-32-F Loading Arms incorporate only three swivel planes of rotation, they are ideal for installations where the vehicle is located a fixed distance from the riser pipe, as they are at 3 Rivers.

Glenn Gibisch with Seeler Industries kneels next to the Mouvex C-Series

'We bring the peroxide in at 70% and dilute it down in the blending tanks, but we were bottle-necked at our truck and railcar unloading area with the old pumps because all of the peroxide is top-unloaded,' Glenn Gibisch, executive VP for the 3 Rivers terminal says. 'When we brought in a 3-inch C-Series pump it increased our unloading rate (from 45 gpm to 90 gpm) so that we doubled our capacity — and it came at the right time because the business was growing.'

Time is money

Prior to updating the pumps, a tanker truck would enter the property and from the time it rolled over the truck scale to the time it went back over the scale on its way out of the property – whether it was there to be loaded or unloaded – 90 minutes would have elapsed.

With the new products, that 90-minute scale-to-scale window has been reduced to 66 minutes.

For more information:

This article was written by Bill Holmes, regional director of energy and transfer for Pump Solutions Group (PSG), which includes Blackmer, Wilden, Mouvex, Griswold, Almatec and Neptune. www.pumpsg.com or Bill.Holmes@PumpSG.com