

Flygt N-pumps in Ypsilanti, MI

Michigan Utility's New Pumps Underscore Advancements in Wastewater Handling

Ypsilanti, Michigan is a city of 19,435 in Washtenaw County. Ypsilanti, or Ypsi as it is commonly referred, is six miles east of Ann Arbor, MI.

Project Background

Ypsilanti's pumps, originally put into service in 1982, became priority candidates for replacement after operating ten years beyond their expected 20 year service life. The Ypsilanti Community Utilities Authority (YCUA), included the project in the utility's Master Plan.

According to YCUA, it had become apparent during storm events that increased capacity would be critical for three of the four stations.

Given advancements in the pumps that YCUA preferred, the utility also had an opportunity to significantly improve the energy efficiency at the stations.

As a result, YCUA embarked on a \$10 million pump replacement and capacity upgrade program involving four of the utility's largest lift stations.

Solution

The four pump station retrofits, awarded as three separate contracts, required procurement of 18 Xylem Flygt N-pumps ranging from 100-HP to 470-HP.

Flygt N-pumps are uniquely engineered to cope with 'modern trash' now entering the nation's wastewater streams. The reliability of an N-pump can be attributed to the semi-open, screw-shaped impeller that prevents clogging and facilitates the unobstructed flow of fibrous material. Without material wrapping around the impeller and sapping pump flow, RPMs and efficiency, energy savings have



END USER: Ypsilanti, MI
CLIENT: Ypsilanti, MI
ORDER DATE: 2013
COMPLETION: 2013

often exceeded 45 percent during field tests of the patented component while continuously maintaining the highest levels of efficiency throughout the life of the pump.

The leading edge of the N-pump's rotating impeller passes across a stationary relief groove located in the pump suction port. The dynamic action cleans and pumps away any rags, stringy materials and solids from the impeller without compromising the hydraulic efficiency.

The engineering proves more reliable than even traditional chopper pumps that can grind rags and other debris but are less effective against hard foreign materials.

Result

At the conclusion of the replacements, three of the four stations will have increased flow capacity.

YCUA executives cite one pumping station, Martz Road, where the new replacement pumps and VFDs have cut energy consumption 36 percent from 2500 KWHs to just under 1600 KWHs daily in actual metered usage.

Snow Road, another facility located downstream from the Martz Road station, will have five new Flygt 470 HP N pumps installed, increasing the maximum station capacity 35 percent, from 24.8 MGD to 33.5MGD

The first two facilities that received the Flygt pumps, VFDs and electrical upgrades experienced 44 percent and 36 percent reductions in kilowatt hours since entering service. The utility expects similar improvements at the third station completed in early 2013 and the fourth facility scheduled for a year thereafter.



Old pumps.



The new N-pumps installed.

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