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ABB drives save £19,000 on pumping energy costs for United Utilities

A water pumping station in Lancashire is saving over £19,000 per year on its energy costs following the replacement of its existing Heenan variable speed drives with new drives from ABB.

The Drummer's Lane water pumping station, owned by United Utilities, is an intermediate pumping station that is used to manage the distribution of water between Prescott and Aspel reservoirs. With three pumps, it can pump a maximum of 100 megalitres a day in either direction, allowing it to serve either the Wigan or Manchester areas.

Built in 1986, the station had three 400 kW variable-speed drives that had begun showing their age and were increasingly unreliable.

Tony Holden, field service engineer with United Utilities with responsibility for Drummer's Lane, says: "The incumbent drives were aging and the components were degrading in performance. They were also becoming increasingly expensive to maintain as the components became harder to source.

"We found that the drives were failing more often, as much as every six months. It was becoming unfeasible to continue with them any longer."

The drives were overheating and tripping out before they could achieve full power. This caused a severe problem for the pumping station when a fire broke out in one of the drive cabinets. "This put a major strain on the station," says Holden. "It was particularly bad as we had peak flow at the time because it was summer. This incident helped us decide that it was essential to replace the drives with a more modern solution."

ABB drives had replaced equipment in other facilities owned by United Utilities. "It was a natural progression to use ABB drives at Drummer's Lane," says Holden. "It is a very good, reliable product, very robust with a good performance over its lifecycle. The keypad is very user friendly and the flux optimisation of the drive gives good energy savings."

United Utilities already had a long standing relationship with ABB Drives Alliance member The Central Group. "Central are very good at performing replacements and repairs at short notice," says Holden.

Central performed an energy appraisal and found that running the pumps with ABB drives could reduce the pumps' load by 70 A.

Gary Hickey of The Central Group says: "We installed three 400 kW ABB industrial drives in the original cabinets, cleaning up the cabinet that had suffered the fire. Because these were low harmonic drives, we could get rid of the 12-pulse transformer." Another advantage was the chance to reduce the use of cooling fans, which the previous drives had needed in an attempt to keep them within temperature limits. Instead of the seven fans used previously, the ABB drives need only two fans in the summer and none in the winter, further cutting energy use.

The ABB drives produced a saving per hour for the duty and assist pump combined of 47 kW. This gives a yearly saving of some £19,213 in energy costs for the application, producing a pay back time of just over three years.

“We are very pleased with both the drives and the standard of work that The Central Group carried out,” says Holden. “The drives were installed without a hitch and we now have a very reliable process as well as gaining significant energy savings.”

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Caption: United Utilities’ Drummers Lane water pumping station is saving over £19,000 per year on energy costs following the replacement of its Heenan variable speed drives with new drives from ABB.

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