United Electric Power
Electrical/Plumbing Supplies & Services
a Power-Flo Technologies company

Customer Success:

East Brunswick Water Authority

"Their solution gives us greater control and far lower operating cost"

Richard Brand
Manager
East Brunswick Water Authority

OBJECTIVES

- Replace aging high-cost flow control system
- Utilize existing height-restricted control cabinets
- Realize significant operational cost savings

SOLUTION

- Custom-designed control system that fits in existing cabinets
- Incorporation of existing control logic in new system
- Variable frequency drive for energy savings

RESULT

- Minimized project costs
- More precise control of pump speeds and water pressure
- Lower operating costs

The East Brunswick Water Authority in New Jersey maintains over 240 miles of water mains and is responsible for delivering drinking water at adequate pressures and volumes for domestic, commercial, and firefighting requirements.

For years the Authority's pumping station relied on an old wound rotor motor that became increasingly inefficient. Cost and controllability were twin issues that needed to be addressed.

Under Richard Brand, a project to modernize the motor control system was launched.

"We knew that more energy-efficient systems and better technology were available, but any solution had to fit inside our existing cabinets," said Brand. "Otherwise the cost to install a new system would have been prohibitive, and frankly that's a major reason why we used a wound motor system for so many years."

Unique Challenges

"Water control is a special area of expertise for us, and we are often called in to deliver custom solutions," said Jerry DiCunzolo, CEO of United Electric Power. "Even so, East Brunswick Water Authority was a unique challenge.

"An off-the-shelf product couldn't meet the Authority's needs. Not only was there a tight space requirement, but also the control logic inherent to the old system needed to be reproduced for the new one.

"Any solution had to deliver greater control of water pressure at a lower operating cost. You add all these things together, and you've got some difficult requirements – but that's the kind of challenge we love to take on."

Custom Design-Build

United Electric Power (UEP) designed a new system that utilizes a 400 HP variable frequency drive (VFD). This drive gives finer control to the Authority and uses much less energy when operating below full speed.

UEP technicians analyzed existing control logic components, and the new system was designed and developed to incorporate this logic.

UEP engineers were able to design a solution that could be retrofitted inside the existing cabinets at the Authority's pumping station, which would not accommodate newer enclosures that were too large for the space.

Total Project Management

United Electric Power performed all the engineering tasks and created CAD drawings to facilitate review and procurement. UEP did all the fabrication and pre-wired many devices in its UL-certified panel shop. UEP also pre-tested the VFD, reduced voltage solid-state starter, and line/load contactors prior to installation.

The new system was implemented in two days at the East Brunswick Water Authority's pumping station.

Immediately, the Authority had more precise control of their pump speed and water levels. The system uses far less energy, which continues to positively impact the bottom line. Total project cost was minimized because the new controls work within the existing cabinets.

"The solution created by UEP gives us greater control and lower operating cost," said Brand. "We are extremely pleased with the results, and would recommend UEP for any water control project."

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