

VFD a cost-saving investment

Pump system already has paid off for some course supers

BY KEVIN T. KNIGHT

As supervisor of four Landmark Land golf courses in Rancho Mirage, Calif., Wayne Conrad knew a problem when he saw one and he saw a big one. Power costs for irrigating just one of the smaller courses at Mission Hills Country Club were exceeding \$100,000 annually.

"We knew that our pump station was the problem," Conrad said. "It was a really inefficient conventional system that used a pressure-reducing valve. After looking at all our options, we decided to replace it with a VFD pump system."

Unlike conventional systems that use a pressure-reducing valve, VFD (variable frequency drive) pump systems use solid-state electronics to precisely control pump motor speeds. This regulates pressure exactly, reduces maintenance, virtually eliminates line surge and harmful cycling of pump motors, and produces significant power savings.

In the first month after converting to a VFD system, Mission Hills saved \$8,000 in power costs.

In a similar situation, Indian Hills golf course near Kansas City, Kan., had an inefficient conventional system that was wasting energy and having difficulty maintaining water pressure. Since installing a new VFD system in April 1988, the course has been pumping twice as much water for 30 percent fewer kilowatt hours, said course superintendent Ed Huggins.

"With this VFD system, the pump only comes on when it registers a flow," said Huggins. "If we turn on one hose, the pump only runs fast enough to maintain pressure for that flow. If we turn on two heads, then it adjusts accordingly. Unlike our old system, this doesn't take too much water out of the main and suck it dry."

Indian Hills' Greens Chairman Jack Robison believes VFD systems are inherently more efficient than conventional alternatives.

"For quite some time I've felt that VFD pumps are the way to go for golf courses," said Robison, an industry veteran with more than 25 years experience in irrigation systems. "Unless you need a conventional system that always requires a pump's maximum output, then a VFD system, in my opinion, is the way to go."

Two companies at the forefront of VFD technology are Best Equipment of Addison, Texas, and Western Pumping Systems of Chandler, Ariz.

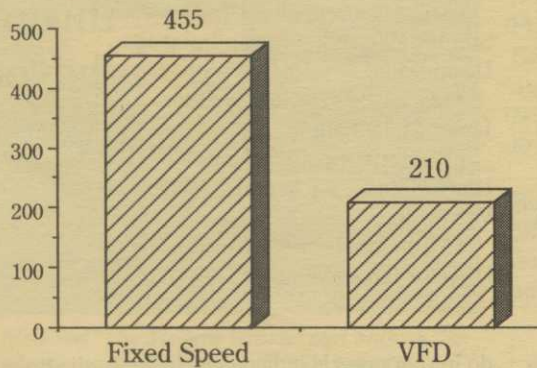
According to Dave Brockway, senior sales engineer at Best Equipment, VFD systems are the wave of the future.

"Golf course superintendents and accountants both benefit from VFD technology," Brockway said. "These systems have been shown to reduce energy costs up to 40 percent and require minimal maintenance since they're computer-controlled. In fact, a single system can be programmed to serve several different irrigation systems at one location, eliminating the need for costly, additional pump stations.

"We've also learned that if our systems are properly installed and work well from the beginning, they will hum right along, virtually problem-free."

The price to pay for those benefits can cost from 10 to 30 percent more than conventional alternatives. Yet, according to Tom Olson, pumping/agricultural representative for Southern California Edison, that cost difference can often be recovered in power

VFD Power Savings: A Case Study



A six-month study at Indian Hills County Club in Kansas showed a 54% power savings using VFD technology. True savings are much greater, however, because the new VFD pump systems has also boosted pressure 60% more than the conventional system. Data courtesy of Best Equipment, Addison, Texas

savings within six months.

"The price of these systems is coming down as demand for them goes up," Olson said. "Four years ago a VFD system cost approximately \$400 more per horsepower than a conventional system. Now they're only \$200 more expensive per horsepower. Of course, you don't have to put a VFD on every motor because there's quite a bit of flexibility in designing these systems."

Last year Southern California Edison was so impressed with the power savings VFD systems offer that the company rebated \$50 for each horsepower in a VFD system. Thus a 60-horsepower VFD system produced a \$3,000 rebate.

Some concern has been expressed that VFD systems are more difficult to service than conventional systems. While it is true that there are more technicians available for conventional systems, the proved reliability of VFD systems appears to have helped calm many fears.

"We originally thought VFD systems would be more difficult to service but when

you think about it, there's nothing really easy about servicing a conventional system," said Roger Gordon, president of Gordon's Irrigation Consulting in Laguna Hills, Calif. "I think conventional systems get out of adjustment more often. That doesn't seem to be much of a problem with this new technology.

According to Brockway of Best Equipment, golf courses that can benefit most quickly from VFD technology are those with high energy costs, high maintenance costs, variable water pressures or different irrigation requirements at one location. Brockway also advises working with a manufacturer or consultant experienced in VFD technology.

"I feel that if you go against VFD technology, it's like trying to hold back the tide," said Gordon. "People need power and cost savings right now and it's almost unpatriotic to use more than you require. I'm convinced that VFD technology provides a substantial savings, not just a small one. It's a quantum leap forward."

EQUIPMENT NEWS

E-Z-GO lists warranty

E-Z-Go Textron has announced a limited lifetime warranty for all 1989 model E-Z-Go Fleet Golf Cars.

Cars will be warranted against defects in materials and workmanship for the lifetime of the vehicle while in possession of the original purchaser.

The 1989 gasoline cars feature a new helical axle powertrain, delivering more horsepower for better hill-climbing.

A new sliding ramp-type governor senses actual ground speed to control vehicle speed.

Both electric and gasoline cars are said to provide the greatest ground clearance in the industry and an 18-foot, 6-inch turning radius.

Contact Ronald P. Skenes, communications coordinator for E-Z-Go Division of Textron, Inc., P. O. Box 388, Marvin Griffin Road, Augusta, Ga. 30913-2699; telephone (404) 798-4311.

Chipco registered

Rhone-Poulenc Ag Co. has announced EPA registration of ChipcoO@ brand 5G pesticide.

The 5-percent granular product was registered for the control of white grubs and other surface and sub-surface turfgrass pests on home lawns and on commercial turf such as golf courses.

Chipco@ Mocaps 5G also was registered for the control of chinch bugs, black turfgrass Ataenuffs beetle, blue grass billbug, sod webworm, mole crickets and nematodes.

Chipco Mocaps 5G became available in January in 50-pound bags.

Write Chipco/Specialty Products, Rhone-Poulenc Ag Co., P. O. Box 12014, Research Triangle Park, N.C. 27709.

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