Connecting controllers with the Internet

BY **LUKE FRANK**

There was a time when irrigating a sports complex required considerable time and manpower. Central control was but a glimmer in somebody's innovative eye. But, gone (for the most part) are the days of dragging hoses across a hundred acres of turf eyeballing the uniformity for the day, doing your best to keep hot spots under control.

With the introduction of new piping materials after World War II, and a sprinkle of ingenuity, these hoses assumed the form of PVC pipe buried in the ground. What a concept—permanently bury a pressurized delivery system, cut down on labor, close the watering window, and establish a standardized coverage uniformity for the site.

Site managers surely must have felt smiled upon. They had improved control over what was applied when, and their turf presented a more even growth, color and overall health. However, it remained cumbersome releasing a crew to strategically punch sprinkler heads into the ground, each into its own quick-coupler. And when the irrigation set was complete, the crew went back out to pull heads from one zone and punch them into the next. It must have felt like some horticultural game of Battleship.

Then along came control zones hardwired to a mechanical clock, enabling the water manager to create irrigation "programs" with increased regularity and efficiency. No more manually opening and closing valves, nor did one have to be present to activate irrigation sets. This must certainly have felt pioneering, however the challenge of managing large sports turf sites still demanded a lot of time and resources.

A new level

Irrigation central control surfaced some 50 years ago, as mechanical controllers with pins and dials were hard-wired with relays to activate irrigation sets from a central location. From a single spot on the site, you could control irrigation zones as far away as you were willing to run wire. What a luxury for a turf manager, and what power to create and implement a practical irrigation management plan. Although the technology was proving itself to be efficient and reliable, adoption was cautious and measured.

Ten years later, computerized central control hardwired a network of solid-state irrigation timers together, taking water management to a new level. Communication with the control system was evolving into a two-way street, with newfound accuracy and reliability. Not only could you monitor and collect valuable, real-time field data, but also you could use these data to develop and upload irrigation programs back out to the satellites.

Over the years, various other forms of communication in the ground and over the airways have since linked irrigation managers with their systems. Radio control has come a long way in connecting disparate data points, sometimes miles apart, to activate and program irrigation. And the software and programming features are astounding, although 50 years from now preschoolers will laugh.

A future in irrigation?

Leaps in technology have an interesting effect in our society. They excite pioneers who have the foresight to refine its use and bring it mainstream. But not without risks. As quickly as new technology emerges and the production race heats up, existing technology is rendered obsolete.

It seems that combinations of computer software, hardwire connections and the airwaves are coming together to further shrink our ever-contracting world. Central control is becoming global in scope. The question remains whether or not it can be engineered in a simple, affordable, practical configuration that will be adopted by the masses.

Hardwiring components together remains the gold standard, but you can download irrigation data from the field and program irrigation sets through radio frequencies as well, provided you are able to clearly define the radio signal range and clarity. These technologies cost money and require some end-user sophistication.

Other transmission/receiver equipment that can be used includes modems, cell modems, e-cards, dedicated servers and so forth. These transmission lines span the globe and can deliver a wealth of information quickly and reliably.

I'd be surprised if most irrigation controller manufacturers weren't developing a prototype that incorporates the World Wide Web, and there are those that already have products on the market. Besides the obvious advantage of connecting manager with site wherever the Internet reaches, use of the Internet is reliable and affordable.

It might be worth exploring how complicated and expensive these control system options are, and how practical they might become. You never know when you'll need to connect cricket fields in Orlando with soccer fields in Katmandu in an intricate irrigation web of water management. **ST**

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