CASE STUDY

Emitters Conserve Energy *and* Water

THE SUMMERS IN SOUTHERN CALIFORNIA ARE NO JOKE. The sun pounds the landscape like a hammer, and it's not unusual for temperatures to reach the '90s before noon. But the summer of 1999 was particularly brutal. An oppressive heat wave kept people indoors. Instead of making trips to their beloved parks and beaches, Southern Californians stayed inside their houses with their air conditioners on high. From morning till night, AC units buzzed as the Southland's overheated residents counted down the days until winter.

The use of electricity surged to record high levels, and the region's power plants were unable to meet the increased demand. As a result, the state was forced to implement rolling blackouts, literally leaving millions of people in the dark.

The power crisis was of particular concern to Ron Stuart. At the time, Stuart was the senior facilities maintenance caretaker for Riverside County, and his department was set to undertake a giant landscaping project. "The project was going to take place at two sites inside the Redhawk housing development in South Temecula," says Stuart. "We were installing an irrigation system on two large slopes. The areas we were dealing with were just huge, so the original design called for four controllers, somewhere in the neighborhood of 96 valves and two large booster pumps. With everything that was going on with the power, we were worried that the system would crash, and the vegetation would burn out and die."

It was clear to everyone involved in the project that the overhead system the original plan called for just wasn't going to work. So they came up with a different strategy. "We asked the landscape architect who was working on the project to design a system that wouldn't have to rely on booster pumps, and he presented us with a drip system," says Stuart. After some fine tuning by the project's contractor, Larry Gross of Sunshine Nurseries, the plan was approved. Ultimately, the new design cut the number of valves and controllers in half and totally eliminated the need for booster pumps.

Although the energy dilemma had been solved, Stuart and his crew were not out of the woods yet. The project called for the use of reclaimed water, which can present a unique set of challenges. Reclaimed water contains high levels of salt and is rich in other minerals, which can often cause drip emitters to clog. "We were originally going to use pressure-compensating emitters, but because we were using reclaimed water, we wanted to make sure we had emitters that wouldn't clog on us," Stuart said. "We had heard a lot of good things about Bowsmith emitters, but before we made a final decision, we wanted to do some testing."

So Stuart and his crew conducted an experiment. They took emitters made by six different manufacturers, including one made by Bowsmith, and connected them to a section of piping. The piping was then filled with sand and hooked up to a waterline. "When we turned on the water, all of the emitters started to slowly fail, and eventually they completely stopped working," Stuart says.

They all stopped working, except for the Bowsmith. "Initially, the Bowsmith started to drop down in flow rate just like all the other emitters did. But after a few minutes, it sped up and started to operate normally again. We found it was able to pass all the debris that it came in contact with. Right there, Bowsmith won the argument."

The reason these emitters were so successful is because of their unique design. "The emitters they used on that project were our NonStop SL 220s, which are great when you're dealing with water that is high in mineral content," says Ken Berg, Bowsmith's vice president. "What makes the NonStop different from every other self-flushing emitter is its expandable silicon diaphragm. When the NonStop comes into contact with debris, whether it be dirt, sand or calcium—or anything else for that matter—the water pressure in the line causes the diaphragm to expand, which allows the emitter to pass the obstruction."

The system's ability to save water was also extremely pleasing to those involved with the project. Since the initial installation, it is estimated that savings in excess of more than 203,512 units of water have been realized. That roughly translates into $200,000 dollars. That's a lot of dough and a lot of H_20.

The county was so pleased with the way the project turned out, they decided to create a standardized irrigation system using Redhawk as a model. "We were really happy with how everything turned out," Stuart commented. "The system is water efficient and energy efficient. It's easy to maintain and saves money." That's a tough combination to beat.