

Fuel cell keeps inn's phones working

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By Ben Benton

Staff Writer

FALL CREEK FALLS, Tenn. -- Officials say that when the power goes out, it really goes out at Fall Creek Falls Inn, the state-owned motel inside the park of the same name in Bledsoe County.

Assistant general manager Brad Duncan said the park's position at the end of the electrical service line means "if the power goes out anywhere in Pikeville, it goes out here."

Outages "can be from 15 minutes to two or three days," Mr. Duncan said.

But on Aug. 2, the park installed a hydrogen fuel cell to provide an emergency electrical supply. Bledsoe Telephone Cooperative Inc. in Pikeville, Tenn., is field-testing the hydrogen fuel cell until September, officials said.

The installation by ReliOn Inc. of Spokane, Wash., is the first in the state and the first in the southeastern United States to be used by an independent, local phone exchange such as Bledsoe Telephone.

The fuel cell "keeps us from being stranded," Mr. Duncan said.

Fall Creek Falls is a remote, 22,000-acre vacation site sought out by people who want to get away from it all, he said.

But the ability to communicate with the outside world is a necessity, especially because wireless phones don't work well in the park and the only other way to communicate without a landline telephone is by radio, Mr. Duncan said.

The hydrogen fuel cell provides emergency power for phone systems at the park's inn, Bledsoe Telephone general manager Greg Anderson said.

"It's a brand-new thing for us," Mr. Anderson said.

David Mercer, Bledsoe Telephone's network operations manager, said six tanks of hydrogen gas can keep phone systems running for up to five days.

Guests staying at the 145-room inn or in one of the 30 guest cabins won't lose their phones even if electrical power is lost for days at a time, Mr. Mercer said.

An existing battery-powered emergency supply will remain in place and become part of the hydrogen fuel cell system, he said.

"It's sort of a balancing act," Mr. Mercer said.

When electrical power is interrupted, the batteries kick in until hydrogen gas is released into the fuel cell system, he said. The fuel cell produces power to build up the charge in the batteries, then shuts down until the batteries' voltage drops again, Mr. Mercer said.

The hydrogen comes in cylinders available at any welding supplier, he said.

Gerald Tatum, regional sales manager for ReliOn, said the fuel cell uses hydrogen and oxygen in an electrochemical reaction. The hydrogen gas passes through a membrane that separates the atom's positive and negative charges, Mr. Tatum said.

"The positive charge goes through the membrane, and the negative charge does not," he said. "The movement of the negative charge is where the electricity is produced."

At the end of the process, the charges are combined again, along with air, and the result is heat and a small amount of water, Mr. Tatum said.

John Fonville, general manager at the inn, likes the environmentally friendly nature of the system.

"This is so much cleaner than batteries," Mr. Fonville said. He said the equipment has space available to install a second fuel cell that could run the inn's front desk systems.

Mr. Fonville said it seems the electricity never goes out on a weekday morning when there are few guests.

"It goes out on a holiday Friday night when the park's full," Mr. Fonville said. He said the local utility, Sequatchie Valley Electric Cooperative, has to focus on the repair of electrical lines, not restoring landline phone service.

The fuel cell gives the inn and its guests needed phone service until electrical repairs are finished, Mr. Fonville said.

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