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The MARVEL in the MOUNTAIN



PHOTOS SPECIAL TO THE JOURNAL

Bad Creek Hydro Station employees step into South Carolina's longest elevator shaft to go to work. Buried 600 feet below ground, the powerhouse of the station generates 10 percent of Duke Energy's power capacity in the Carolinas.

Duke celebrates Bad Creek's 25th anniversary

BY STEPHANIE JADRNICEK
THE JOURNAL

SENECA — About 600 feet under the ground, carved like a cave into the mountainside, sits the powerhouse of Bad Creek Hydro Station.

During the night, while most people are sleeping and energy demand is low, the hydro station pumps water from Lake Jocassee up to Bad Creek reservoir — approximately 1,200 feet uphill.

Then when energy usage increases the next day, the water that's been stored in the upper reservoir is released into power tunnels, driving turbines in the powerhouse to produce electricity. And the cycle repeats itself.

On Thursday, Duke Energy cele-

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The Bad Creek Hydro Station pumps water from Lake Jocassee to Bad Creek reservoir when energy demand is low and releases it back down through tunnels during peak demand.

'I look at Bad Creek and Lake Jocassee as gigantic batteries. They provide additional electricity when we need it.'

Hydro plant is 25 years old

Built into mountain by Duke Energy

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Old-timers returned to a mountain Thursday northwest of Lake Jocassee to revel in the success of an engineering marvel built inside that uses water to provide electricity for nearly 1,000 homes every day.

Many of those who gathered under a tent in the Oconee County wilderness on Thursday had worked to build Bad Creek Hydro Station, which was constructed as one of two pump-storage facilities Duke Energy owns and continues to operate today.

And though the beauty of the Jocassee Gorges Wilderness Area surrounded the visitors on a warm, sunny day, they came to celebrate what they had created inside the mountain.

Hewn from more than 1 million cubic yards of granite blasted beneath a rarely visited mountain nearly 30 years ago, the utility created its hydro

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HEIDI HEILBRUNN/STAFF

A Duke Energy employee walks through the powerhouse 500 feet below ground at Duke Energy's Bad Creek Hydro Station on Thursday.

and construction feats accomplished with this facility," said Regis Repko, Duke's senior vice president chief fossil-hydro officer who worked at Oconee Nuclear Station while Bad Creek was under construction. "When you look at this facility, there were really visionaries behind it as you can imagine."

Known at the time as Duke Power, employees designed and built the entire project, Repko said.

Water still seeps through the rocks deep inside the powerhouse, which can be accessed by employees through a long tunnel or a lengthy elevator ride. Though filled with giant machinery, the rock walls are ever present as is the hum of turbines or the rush of water through open valves.

Now the company is looking to the future with upgrades planned at the station that's remained in constant operation for 25 years.

Duke plans to file plans with the Federal Energy Regulatory Commission to replace all four water turbines and rebuild all four valves beneath Bad Creek Reservoir to increase capacity another 200 megawatts to provide a stabilizing power source during peak hours of energy usage, said Preston Pierce, general manager of Duke's Hydro West, which includes the pump-storage stations at Jocassee and Bad Creek.

The utility would drain the Bad Creek Reservoir in 2018, rebuild valves that haven't been replaced in 25 years, then replace one turbine each year to complete the project by 2023, Pierce said.

That would bring the facility up to the highest current technological standards and prepare it to meet the energy needs of the Upstate for the future, he said.