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**Subject:** FYI: "Energy demand, climate change drive big push for atomic power"  
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Jim,

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Energy demand, climate change  
drive big push for atomic power

By Kyle Stock  
The Post and Courier  
Monday, October 15, 2007  
JENKINSVILLE

— Deep in the pine woods between Columbia and Greenville, miles from the nearest interstate, a concrete dome squats like a fat little corn silo. It's a scarred relic, a once-radioactive ruin from the first nuclear energy harvest.

The little reactor smashed atoms from 1964 to 1967, producing only a trickle of electricity but paving the way for a torrent of bigger nuclear power plants, including the massive Virgil C. Summer facility that sits about a mile away.

Scana Corp., which owns the long-dormant dome, is about to tear it down, but the nuclear fission from the little plant is still playing out, as U.S. utilities draw up plans to build nearly three dozen new reactors, including five in South Carolina, three in North Carolina and two in Georgia.

Conditions are ripe for nuclear proliferation. Concerns about global warming and the greenhouse gases belched from traditional power plants are running high, as are prices for coal and oil. Nuclear plants, in comparison, run on relatively dirt-cheap fuel and don't emit anything more harmful than steam into the air.

Politicians, utility executives and even environmentalists are pushing for more reactors for the first time in decades. The Bush administration laid the foundation in the 2005 Energy Policy Act, promising taxpayer funds to pick up a big part of the tab on the next generation of nuclear plants,

part of a push to wean the nation off foreign oil.

Earlier this month, the Energy Department added another financial sweetener, increasing from two-thirds to 80 percent the amount that it will guarantee on loans to build new reactors.

"It used to be considered the buggy-whip industry, but there are lots of opportunities now," said Dan Gatlin, manager of the Summer station.

Late last month, NRG Energy Inc. submitted the first nuclear plant application to the U.S. government in almost three decades as it seeks to build two reactors near Houston. A few days later, the Tennessee Valley Authority approved plans to build two reactors in northern Alabama. And Energy Metals Corp., a Canadian company, submitted the first application to mine U.S. uranium in almost 20 years.

Triple check

The main control room of a nuclear power plant looks like an air-traffic tower or a scaled-down version of the command center at a space-shuttle launch. Three to 10 people — almost always men — scan a room full of lights, switches and levers, hoping their jobs will be boring that day.

To say that their actions are deliberate would be an understatement.

Before flipping a switch or throwing a lever, each worker at the Summer plant calls out his intentions. Another worker echoes the action and the first controller calls out the action a third time before moving a finger.

In some cases, a controller will call for a "peer check," in which a co-worker walks over and makes sure the controller is about to turn the proper switch.

Gatlin said these people spend one-fifth of their time — roughly one day of every work week — training in a control-room simulator.

"A lot of guys from fossil-fuel plants think it's ridiculous," he said.

"They say, 'I need to go to the restroom. Have you got a procedure for that?'"

This is the legacy of Three Mile Island and Chernobyl — a near-disaster and an outright catastrophe that turned public and government sentiment against nuclear power for decades and scrapped a number of plants. With a renaissance at hand, the nation's nuclear work force is being more careful than ever.

"If we have a bad day, we could torpedo everyone's plans for new nuclear, so it's critical that this industry polices itself," Gatlin said.

Uncharted territory

All told, utilities have announced plans to build 33 new nuclear reactors. Five of those units are slated for South Carolina, which already produces more nuclear power than all but two other states. Duke Energy Corp. is prepping to build two reactors in Cherokee County and a third in Oconee County. Scana and Santee Cooper plan to build two new reactors next to their Summer facility near Jenkinsville.

It has been almost 30 years since a U.S. utility built a nuclear plant.

Power companies, construction crews, government regulators and even

suppliers are feeling their way in the dark.

Travis Miller, who follows the finances of Scana and other utilities for Chicago-based Morningstar Inc., said backlogs in the supply chain for reactors and other major components are a major concern for investors. He also noted that utility executives could have trouble raising the massive piles of capital to build these plants.

"There's still a lot of risk behind them," Miller said. "That's one of the reasons you haven't seen them built."

Laura Varn, Santee Cooper's vice president of public relations, was in grade school the last time a new nuclear power plant cranked up in this country.

"There's just so many moving pieces to it. What we're really talking about is restarting the nuclear industry. ... It's really an insurmountable challenge in some ways," she said.

Moncks Corner-based Santee Cooper has spent \$11.4 million laying the groundwork for the reactor it plans to build with Scana. It expects to spend almost \$400 million before it even secures a building permit.

The government, once again, is trying to streamline the process, rolling together its traditionally separate construction and operating permits into one. And utilities are teaming up on paperwork, writing up universal applications that can be used for a number of different plants if they are installing the same equipment.

Ron Clary, a Scana general manager who helped build its first nuclear plant, said his job is particularly exciting these days. The process may be arduous, but his team has better tools to work with now.

"My '61 Volkswagen didn't have seat belts, air conditioning or pollution controls, and they certainly make those safer today," Clary said. "When we designed plants in the '70s, we didn't even have computers."

**Waste management**

But concerns about radiation, which poisoned the industry in the 1980s and 1990s, have not entirely disappeared. About 19 percent of U.S. power comes from 104 active nuclear plants, but the government still has not figured out what to do with nuclear waste — now a 56,000-ton pile.

Almost 3,400 tons of that uranium is in South Carolina, sitting in tanks of water outside the plants where it was used. Nuclear utilities said the practice is safe for an indefinite time, but it has raised security, environmental and health concerns.

The federal government has fought more than 50 lawsuits from utilities alleging it reneged on a promise to take delivery of nuclear waste, a service for which the utilities have paid \$15.3 billion to date. And it is fighting a few more lawsuits over a plan to put the waste in an underground storage cavern at Yucca Mountain in Nevada.

Scana and Santee Cooper plan to expand their on-site storage, and said that the lack of a federal spent-fuel depository won't affect their decision to build a reactor.

"Our view is that's really a national public policy issue," said Santee

Cooper's Varn. "We're just not in the policy-making business. We're in the energy-making business."

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