

Going Nuclear

The Nuclear Regulatory Commission has approved, for the first time in more than 30 years, the construction of reactors at two existing nuclear plants. While it may not be a nuclear renaissance, most agree the decision signals a nuclear thaw. Since the partial meltdown of a nuclear reactor at Three Mile Island in Pennsylvania in 1979, the commission stopped issuing building permits and took a hard look at safety measures in U.S. plants as other countries moved forward. Now, as those countries take a step back following the Japanese disaster at the Fukushima Dai-ichi Nuclear Power Plant, the U.S. is moving ahead.

A NUCLEAR THAW

After 30 Years with No Construction, Feds Give Blessing to New Reactors

by Jennifer Ginn

For the first time in more than 30 years, the Nuclear Regulatory Commission has given the go-ahead to build reactors at two existing nuclear power plants—one in Georgia and one in South Carolina. Some pundits have said this signals a nuclear renaissance for the United States, while experts agree that it's more of a nuclear thaw.

"We are in expansion mode," said Steve Kerekes, senior director of media relations for the Nuclear Energy Institute, a policy organization representing the nuclear industry. "We readily acknowledge it's going to be a fairly measured expansion. At best, we'll have five new reactors online by the end of this decade."

A Stalled Program

While nuclear energy programs moved ahead in Europe and Asia over the past three decades, it stalled in the United States. The Three Mile Island accident in 1979, which led to a partial meltdown of one of the plant's reactors, led the Nuclear Regulatory Commission to stop issuing building permits and take a hard look at safety measures in U.S. plants.

In February, the Nuclear Regulatory Commission issued a combined operating license, giving the Southern Co. permission to build and operate two new reactors at its Vogtle plant, located near Waynesboro, Ga. The new reactors are expected to come online in 2016 and 2017 and will generate 1,100 megawatts each.

"The other four commissioners and I felt like ... nuclear power would be the best-cost option for our consumers," said Tim Echols, chair of Georgia's Public Service Commission. "More than anything else, it is the cheapest form of electricity to generate in Georgia. Planning for the future, having reliable power at a cheap price, is important to us. It also means a lot of jobs for Georgia."

In South Carolina, Santee Cooper and SCANA Corp. received permission in late March to build two of the same reactors being used at Vogtle at the V.C. Summer plant near Jenkinsville. The first reactor is due to go online in 2016, with the second following in 2019, said David Wright, vice chair of

the South Carolina Public Service Commission and president of the National Association of Regulatory Utility Commissioners.

"We're getting a lot of industries in the state and they're big users of power," Wright said. "You need to make sure you have an abundant source of power so you can promote economic development and jobs. ... We feel this (the new reactors) is going to meet that in a big way. The side benefit, and it's a big one, when the nuclear plants come online, a lot of the older coal plants will be retired."

Big Price Tags and Natural Gas

Getting to those environmental benefits has taken some economic investment.

One of the major obstacles to building more nuclear power plants in the U.S. is the high cost of construction, Wright said. Both the Georgia and South Carolina plant expansions are estimated to cost \$14 billion each. The federal government has guaranteed \$8.3 billion in loans for Georgia's expansion.

That high cost is a big problem with nuclear energy, said Jordan Weaver, nuclear program scientist with the Natural Resources Defense Council. The council is a national nonprofit group seeking to improve the environmental, health and safety conditions at America's nuclear facilities. Nuclear energy is unproven economically, Weaver said, because new plant construction often requires financial assistance from the federal government.

"I think nuclear does have a part to play as long as they (the energy companies) do it safely and with less taxpayer influence," Weaver said. "... I'd much rather see us not license this massive fleet of reactors without any proven commercial viability, when you're locked into that commercial rate structure for the next 60 years. It's based on this really long-lived risk financially."

Hydraulic fracturing—or fracking—is adding to the uncertainty of nuclear power's future by making natural gas abundant and cheap.

"Right now, gas is really, really cheap," Wright said. "Any utility right now would be looking at natural gas as a cost-saver for customers. ...



States Challenge Feds Over Nuclear Waste Inaction

Everybody involved in the nuclear debate agrees that the more than 65,000 tons of spent fuel rods being housed at nuclear sites across the country need to be stored somewhere, but the billion-dollar question is, "Where?"

In 1987, Congress picked Yucca Mountain—located on federal land in the Nevada desert—to be the country's nuclear waste disposal site. Three decades of litigation followed and, in 2009, the Obama administration cancelled funding for the project, effectively killing it.

"It's been pretty clear the main problem was that it was a political landmine," said Lisa Janairo, senior policy analyst for The Council of State Governments' Midwest office, who has studied nuclear waste issues.

Some states are becoming impatient for the federal government to make up its mind where the waste should go. Since 1983, states that generate nuclear power pay a tax to the federal government that is supposed to go toward developing a national repository. Although the fund now contains more than \$25 billion, nuclear waste continues to be stored at power plants.

In March, U.S. Sen. Lindsey Graham of South Carolina was pushing a bill that would refund much of that money to utility customers. Many states are suing the federal

government for either ruling that nuclear waste could be stored at closed nuclear plants or renege on an agreement to dispose of nuclear waste.

In January 2010, President Obama tasked the newly formed Blue Ribbon Commission on America's Nuclear Future to recommend a new plan for what to do with the country's nuclear waste. In January, the 15-member panel recommended a "consent-based" siting process for a new nuclear repository. That presents some interesting questions, Janairo said.

"When you're dealing with a facility that takes 20 years to develop and will operate for millennia, it's hard to really pin down consent," she said. "Who do you need it from and how long do you need it for?"

Although remaining questions will be tough to answer, the commission said the country has an ethical responsibility to come up with practical solutions for storing the country's nuclear waste.

"... Americans have benefitted from the energy and deterrent capacity provided by nuclear technologies for more than 50 years," the report said. "We cannot and must not continue to defer responsibility for dealing with the resulting high-level wastes and spent fuel."

NEW NUCLEAR

WAYNESBORO, GA.—U.S. Secretary of Energy Steven Chu visited the Vogtle nuclear power plant in February. The Nuclear Regulatory Commission issued a combined operating license, giving the Southern Co. permission to build and operate two new reactors at its Vogtle plant.

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At the same time, if everybody does a mad dash to gas and puts all their eggs in one basket, then the price would surely go up. You need to have a balanced portfolio. You need to have a generation mix that is responsible, efficient and can provide least-cost energy to your consumers in a way that keeps volatility minimized."

Georgia's Echols said cheap natural gas could derail the country's interest in nuclear power.

"I think the renaissance depends upon what happens with natural gas prices," Echols said. "I think if natural gas prices stay low, I don't think we're going to see the interest in nuclear I thought we were going to see. I think we are going to see (natural gas) prices stay low unless the EPA gets its hand on fracking."

Safety Concerns

Even if natural gas prices rise and make nuclear energy economically more attractive, it still faces significant safety concerns. Those concerns gained a new focus last year because

of the disaster caused when an earthquake and tsunami cut off power to Japan's Fukushima Dai-ichi Nuclear Power Plant. Three reactors had a meltdown and 90,000 people were evacuated.

"I think the accident in Japan really sent shockwaves through the industry and through the American public, who legitimately were concerned about whether it (an accident) could happen here," said Lisa Janairo, senior policy analyst for The Council of State Governments' Midwest office, who has studied nuclear energy and nuclear waste. "... I don't think the Nuclear Regulatory Commission has done a good job of getting information out to people about what the likelihood is of something like that happening here."

Janairo said people need assurance a similar loss of power and inability to control what's happening in the reactor can't happen here.

Other countries have placed moratoriums and bans on future construction of nuclear plants because of the Fukushima accident.

"Even China is halting construction until they do a full safety review and they're building 20 or so plants," said Weaver.

"Here in the United States, in the 12 months post-Fukushima, ... we've seen almost twice as much activity than in the 12 months before (the accident). ... Why is the rest of the world taking a step back?"

Kerekes said nuclear power has proved over time to be a safe energy source in the U.S.

"No one would have been talking about nuclear energy if we hadn't been operating well over many years now," he said.

And, Georgia's Echols said, nuclear isn't the only energy source with problems.

"There's no form of energy that doesn't have some negative aspect to it," he said. "... The fact that it is highly regulated, by numerous agencies, will help ensure that safety is paramount and is always a priority. I really think it's worth the risk. It is my hope that after we finish these two (reactors), we get approval to build two more on this site." 



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