

ENERGY/ENVIRONMENT

## Global warming heats up a nuclear energy renaissance



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Global warming and the BP oil spill have helped rehabilitate nuclear energy in the eyes of the public – and some environmentalists.

By **Chuck McCutcheon**, / Contributor | AUGUST 9, 2010



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MINERAL, VA. — As a young engineer in the mid-1970s, [Eugene Grecheck](#) worked on plans to construct four reactors at a new nuclear power plant in central [Virginia](#)'s rolling countryside – only to see two of them scotched before completion because of industrywide concerns over soaring costs and public perceptions of environmental danger.

Now, three decades later, Mr. Grecheck is overseeing plans to finally add a third reactor at [Dominion Energy Inc.](#)'s North Anna plant that could power up to 375,000 Virginia homes. The company is one of more than a dozen nationwide seeking licenses from the [US Nuclear Regulatory Commission](#) to build and operate 22 new reactors.

"For me, emotionally, there would be no better way to end up than where I started with this," Grecheck says, as he surveys the patch of ground near the Lake Anna reservoir where a stake marks what would be the new domed reactor's center. "I feel a great sense of satisfaction that I've helped get us to

this point."

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"This point" is the nuclear renaissance that Dominion, and the industry as a whole, seems to be enjoying. Global warming has energized the quest for clean, carbon-free energy that won't add to the greenhouse effect; and the [BP oil spill](#) has added to the distaste for fossil-fuel dependence.

Public and political acceptance of nuclear power as a logical large-scale alternative to fossil fuel is higher than it has been in a generation. Once mainly associated with mishaps like [Three Mile Island](#) and [Chernobyl](#) – not to mention bumbling nuclear plant worker [Homer Simpson](#) – the energy source now has support from 62 percent of Americans, a [Gallup Poll](#) found in March. That's the highest since Gallup began asking about the topic in 1994.

Even former foes like [Stewart Brand](#), founder of the [Whole Earth Catalog](#) and an alternative-energy crusader, and [Mark Udall](#), a member of the Udall family Democratic political dynasty that has stewarded natural resources, are rethinking the nuclear energy option. They're influenced more by the immediately tangible environmental consequences of greenhouse gases than by possible radiation disasters.

Likewise, [President Obama](#) has taken steps to push the [new thinking into action](#). In February, he announced federal [government loan guarantees](#) to build the first new power plants in three decades. And construction of these plants is encouraged by a comprehensive energy and climate change bill introduced in Congress in May.

To Grecheck and other supporters, the reason for such a renaissance is clear: The country has at last realized that nuclear power's advantages far outweigh its risks. It already generates about one-fifth of the nation's electricity, and advocates say it could provide much more as it reduces the reliance on carbon-producing fuels such as coal and oil.

[France](#) already gets more than three-quarters of its power from nuclear energy. Several other nations plan substantial expansions in the decades ahead, including [Japan](#) (with 30 percent of its electricity from nuclear power), [Russia](#) (16 percent), and [South Korea](#) (39 percent).

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[Sen. Lamar Alexander \(R\)](#) of [Tennessee](#) has called for 100 new reactors by 2030, and has joined 10 other senators in urging Mr. Obama to host a "nuclear energy summit." His colleague, Colorado Senator Udall, is one of the recent converts to the cause.

"For some, news that a Udall is speaking favorably about nuclear power will come as a stark – and perhaps unpleasant – surprise," Udall said in a 2009 speech. "But I also believe public and expert opinion on the risks and benefits of nuclear power has changed."



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Nevertheless, many environmentalists disagree, and are disappointed at having to reopen a battle they thought was won long ago. They still have concerns about nuclear-power safety, but also have advanced another: The plants take too long to build (up to a decade) and are too costly (\$14 billion for two proposed [Georgia](#) plants) to make much difference in the next two decades, when they contend it is most crucial to combat global warming.

Environment America, a federation of green groups, stated in a recent report that energy efficiency and renewable sources such as wind, solar, and geothermal can do the job faster and cheaper. The report estimates that building 100 new reactors would require a \$600 billion investment – but that same amount invested in other carbon-free technologies could cut at least twice as much carbon pollution by 2030.

"When time and money is of the essence in fighting [global warming], nuclear basically fails on both counts," says [Anna Aurilio](#), director of Environment America's [Washington, D.C.](#), office.

No new nuclear plants have been constructed in the [United States](#) in the past three decades. The expense of building them drove some utilities into bankruptcy in the 1970s and '80s, causing [Wall Street](#) to become wary about lending start-up capital for new ones.

As an alternative to building such behemoths, some in the industry have been investigating the concept of smaller nuclear plants, dubbed "backyard nukes." The modular plants – some as small as a refrigerator – would be buried underground and could generate more than 25 megawatts of electricity, enough to power 20,000 homes.

Nevertheless, the cost issue for regular-sized reactors continues to worry some supporters, including former [New Mexico](#) Republican Sen. Pete Domenici, who until his retirement in 2008 was the nuclear world's leading apostle on [Capitol Hill](#). In a December speech, he warned: "I fear that America's nuclear renaissance has stalled." These days, he says, other countries – such as [China](#), which has 23 reactors under construction – are enjoying a renaissance unimpeded by the economic slowdown affecting US progress.

"We have a little bit going, but not enough," says [Senator Domenici](#). "I don't know whether we're going to be in an era where we're going to have a lot of money to spend.... That wouldn't lend itself well to the evolution of nuclear power. "

Today's renaissance perhaps began with Domenici's 1997 speech at [Harvard University](#) in [Cambridge, Mass.](#), in which he vowed to "lead a new dialogue" on nuclear energy. At the time, he had the political capital of just having brokered a deal with [President Bill Clinton](#) on a successful plan to wipe out the budget deficit. He told his staff he needed something else to do.

"The next time we met, they told me they thought I should take on nuclear power," he recalls. "It seemed like [the country] had gone to sleep and it was time to wake up."

So Domenici used his chairmanship of the Energy and Natural Resources Committee and his post as top Republican on the panel funding the Department of Energy to give the industry loan guarantees and more research and

development money, and to simplify reactor licensing.

At the same time, the [Nuclear Energy Institute](#) – the industry lobby – stepped up efforts to make its case that plants had become safer and more efficient. NEI also beefed up donations to lawmakers from less than \$100,000 in 1998 to more than \$400,000 in 2008, according to the Center for Responsive Politics.

The group didn't always need to be proactive. [Alex Flint](#), NEI's vice president for regulatory affairs, recalls that Udall's aides "cold-called us and said, 'You don't know us, but we'd be interested in learning more about nuclear.'" Udall spokeswoman [Jen Talhelm](#) says the senator's position "is the product of many years of careful consideration about the challenges we face regarding energy independence and climate change."

But Ms. Aurilio of Environment America is unconvinced. She learned to mistrust companies' environmental claims while growing up in [Woburn, Mass.](#), the site of corporate toxic waste dumping into groundwater in the 1970s that became the subject of the bestselling book and film "A Civil Action."

The BP oil spill has only deepened her skepticism. She cites [Vermont](#) – where lawmakers voted in February not to extend an aging reactor's license just weeks after it leaked radioactive tritium – as proof that acceptance is not unanimous. "The American public has been lulled into a false sense of security – until there's a problem in your backyard," she says.

The industry aggressively pushed for the waste generated at plants to be buried at [Yucca Mountain](#), an enormous cavern in the desert 90 miles northwest of [Las Vegas](#). But the Obama administration shelved that idea, bowing to decades of angry resistance from Nevadans. Obama recently appointed a commission to study the waste issue, with [Domenici](#) a member.

For now, industries are content to let the spent fuel rods that make up most waste sit parked above ground at their sites in 100-ton metal and concrete containers (called dry casks). That satisfies converts such as Mr. Brand, who expects better ways to deal with waste to be developed.

"The long-term waste issue was the one that freaked me out as an environmentalist all those years," Brand recalled in an April panel discussion in [Laguna Niguel, Calif.](#) "But then ... I came to realize that dry-cask storage for spent fuel [is] a really good place for it. Because we can leave it for half a century or a century while we think about it."

Brand added that he thinks his former allies are disingenuous to bring up nuclear power's price: "Environmentalists are not famous for worrying about money. We're perfectly happy when we have environmental impact reports and delays and things that raise the cost of all kinds of things ... that happen in the world."

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Dominion Energy officials took public sentiment as well as cost into consideration when thinking about applying for a new reactor at North Anna. Two years before submitting its application, Dominion commissioned a poll of local residents. More than three-quarters said they backed having a Nuclear Regulatory Commission feasibility study for an expansion. Dominion has since received the agency's approval for an early site permit, and in May it selected

[Mitsubishi Heavy Industries Ltd.](#) to design and build the reactor.

But environmentalists have fought the proposal. Last year, a state circuit court judge in [Richmond](#) ruled that the company's water quality permit violated the federal [Clean Water Act](#). Dominion appealed the ruling, which was overturned in June.

The plant draws water from Lake Anna, sending it to cool in a series of lagoons before discharging it back into the river at a warmer temperature. "To me it looks like baling wire and duct tape on a problem that can be solved in a much better and cleaner way," says [Louis Zeller](#), science director of the [Blue Ridge Environmental Defense League](#), which initiated the court challenge. "Wind energy and solar energy don't carry these kinds of problems."

The company rejects claims that the new reactor will harm the environment. But Dominion still hasn't made a final decision to build the reactor.

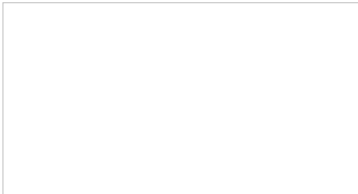
"We're being careful – that's why we're doing this methodically," Grecheck says. "When we are finally convinced this can be done for the right price and on schedule ... we'll be doing this with a great deal of confidence that we can deliver.

"That," he adds, referring to the 1970s planning process that led to the two reactors being scrapped, "is not what happened last time."

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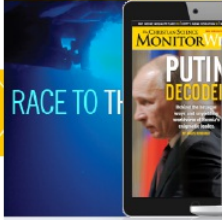


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