

Nuclear Plants, Old and Uncompetitive, Are Closing Earlier Than Expected



Scott Olson/Getty Images

Zion Nuclear Power Station, which served Chicago and part of Illinois, was built in 1973.

By MATTHEW L. WALD
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Washington — When does a nuclear plant become too old?

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Robert F. Bukaty/Associated Press

The Maine Yankee nuclear plant in Wiscasset, Me., which began operation in 1972, was shut in 1997 and imploded in 2004.

The nuclear industry is wrestling with that question as it tries to determine whether problems at reactors, all designed in the 1960s and 1970s, are middle-aged aches and pains or end-of-life crises.

This year, utilities have announced the retirement of four reactors, bringing the number remaining in the United States to 100. Three had expensive mechanical problems but one,

[Kewaunee in Wisconsin](#), was running well, and its owner, Dominion, had secured permission to run it an additional 20 years. But it was losing money, because of the low wholesale price of electricity.

“That’s the one that’s probably most ominous,” said Peter A. Bradford, a former member of the Nuclear Regulatory Commission and a former head of the Public Service Commission in New York. “It’s as much a function of the cost of the alternatives as it is the reactor itself.”

While the other three, San Onofre 2 and 3 near San Diego and [Crystal River 3 in Florida](#),

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faced expensive repair bills because of botched maintenance projects, “Kewaunee not only didn’t have a major screw-up in repair work, it didn’t even seem to be confronting a major capital investment,” he said.

This is a turnaround because until recently, the life expectancy of reactors was growing. When the Nuclear Regulatory Commission began routinely authorizing reactors to run 20 years beyond their initial 40-year licenses, people in the electricity business began thinking that 60 was the new 40. But after the last few weeks, 40 is looking old again, at least in reactor years, with implications for the power plants still running, and for several new ones being built.

“They were intended to last for as long as they were commercially feasible,” said Robert E. Curry Jr., who was a member of the New York Public Service Commission from 2006 to 2012. But with low gas prices, additional costs imposed after the Fukushima Daiichi accident of March 2011, and “the general mistrust of nuclear by anyone who saw ‘The China Syndrome,’” commercial feasibility now is evidently shorter, he said.

Even if the economics do not result in retirements, they do mean setbacks. Exelon, the nation’s largest nuclear operator, set out a few years ago to invest \$2.3 billion in its existing reactors and raise their generating capacity by 1,300 megawatts, a little more than one new reactor would generate. But after completing about a quarter of the plan, it dropped the rest, and said it would pay its suppliers \$100 million in penalties for the cancellation, because the economics were no longer favorable.

Christopher M. Crane, the chief executive, said that Exelon had no plans now to retire any reactors but that the company would continue to review conditions, including low wholesale prices for electricity, to see if early shutdowns were needed.

Oyster Creek, an Exelon reactor in Forked River, N.J., is the oldest in the country, having opened in 1969. It received a 20-year license extension in 2010, but Exelon promised to shut it by the end of 2019 in exchange for an exemption from some rules governing the discharge of hot water from the plant. It might not make it to 2019, though. At San Onofre, the owners were faced with the need for a big new investment for repair, and calculated not only the price but the number of years of life remaining over which they could recoup their investment. The same could happen at Oyster Creek.

Two to watch are Vermont Yankee, in Vernon, just north of the Massachusetts border, and Indian Point, in Buchanan, N.Y., 30 miles up the Hudson River from New York City. The states of Vermont and New York are seeking to close them. If they remain profitable, the owner of all three units, Entergy, seems likely to fight tooth and nail to keep them open, but Vermont Yankee’s profitability does not seem certain. It could join plants like Maine Yankee, or Zion, near Chicago, in retirement and decommissioning.

Such is the fate of all old power plants. As the Nuclear Energy Institute, the industry’s main trade association, pointed out when San Onofre closed, of the power plant retirements since 2010, 41 percent were coal and 33 percent were natural gas. Ten percent were nuclear. Old power plants lead conditional existences; they may not survive new environmental rules or other circumstances that require expensive retrofits.

The difference is that gas plants continue to be built, and so do a few coal plants. There was a gap of 30 years in new nuclear plant construction, which ended this year, but only four plants, two twin-reactor installations, have broken ground. A fifth, left for dead in the 1980s, is being revived. While utilities in the last few years have announced plans for more than a dozen new reactors, beyond the five now under construction only another four or so seem possible in the next few years.

And all the others are getting older.



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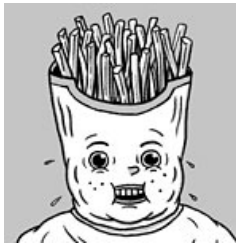
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