

Prices Are Rising

NUCLEAR COST ESTIMATES
UNDER PRESSURE

BY PAM RADTKE RUSSELL

■ ■ ■ THE RISING COST OF MATERIALS

■ ■ ■ and labor has the potential to put an end to the nuclear renaissance before it ever gets started.

Company estimates that have been released show costs for an individual unit could be as high as \$12 billion, and one consultant expects those estimates could rise if material prices continue to escalate.

Florida Power & Light told the Florida Public Service Commission late last year that the cost for building new units at Turkey Point in south Florida could be up to \$8,000 per kilowatt hour – or \$24 billion for two units. Earlier this year, Progress Energy pegged its cost estimates for two new units on Florida's west coast at about \$14 billion plus \$3 billion for transmission and distribution. While Progress' estimates are lower than FPL's, they are more than twice as much as the \$2,000 per kilowatt-hour that industry contractors promised for new nuclear plants just two years ago.

"There's a lot of sticker shock," said Jim Harding, an energy consultant who helped the Keystone Center develop its June 2007 report, "Nuclear Power Joint Fact-Finding." That report concluded that overnight estimates for a new reactor would be \$2,950 per kilowatt-hour, or between \$3,600 and \$4,000 per kilowatt-hour with interest. That estimate, generated with the input of 27 participants, including power companies and nuclear contractors, is already outdated because of the rapidly rising cost of metals, forgings, other materials and labor needed to build a new nuclear unit, Harding said.

In October, Moody's Investor Service estimated total overnight costs of a new nuclear plant, including interest, would be between \$5,000 and \$6,000 per kilowatt-hour. But even those numbers are only guesses, Moody's notes in its report, "New Nuclear Generation in the United States."

"We believe the ultimate costs associated with building new nuclear generation do not exist today and that the current cost estimates represent best estimates, which are subject to change," according to the report.

While the Florida PSC ultimately gave FPL approval to move forward with the Turkey Point project and is evaluating Progress Energy's proposal, other companies, such as South Carolina's SCANA, are still evaluating whether nuclear is the right option.

"It's not an easy decision for a utility to make going forward," Harding said. The decision to move forward with building a new nuclear plant is going to be a real "head scratcher" for companies to determine whether they can finance such a large project and whether it will be the most cost-effective resource, Harding said.

Adrian Heymer, senior director for new plant deployment for the Nuclear Energy Institute, said many companies are evaluating conditions regularly. Heymer said that new nuclear plants are still the best option for new baseload generation, but expects that not all 17 companies with plans for new nuclear generation will move forward.

"Some people may run the evaluation and say no, others may say yes, this is for us," Heymer said.

Moody's report says it expects only one or two new plants to be online by 2015 – the target date for many of the companies that have proposed new nuclear units.

The cost to get firm estimates may turn some companies away from pursuing nuclear power. A company must spend at least six months and several million dollars to get a number it is comfortable with, Harding said.

New baseload generation is a necessity in many places in the country. If new nuclear plants aren't built, other power plants will have to be built, NEI says.

"If not nuclear, then what?" asked Heymer.

Coal, gas and other fossil-fueled power plants all use the same raw materials that are escalating in price. Moody's report notes that the same cost uncertainties facing nuclear plants are also problematic for new coal plants.

"It's not so much how much the plant costs, it's what's the price of electricity is when the plant comes online and how does that compare with natural gas, that's really the important question," Heymer said.

Yet Harding said he estimates that operating cost per kilowatt-hour for a new nuclear plant will be 30 cents per kilowatt-hour for 12 or 13 years until construction costs are paid down, at which point operating costs will drop to 18 cents. Harding said those costs are a tough sell when concentrated solar power and wind power can be had for about 14 cents per kilowatt-hour. He said he believes that those renewable resources, as well as natural gas – perhaps LNG – might prove competitive to a new nuclear plant.

In the end, the cost of a new nuclear plant won't be known until it comes online. And Harding expects that if prices continue to rise, even FPL's high estimate could be on the low end.

"There's no real escalation in their numbers moving forward," he said, "just nominal inflation of 2.5 percent."



STOP ENDLESS INTERFACES. START ENDLESS VISIBILITY.

An IBM Maximo® Asset Management solution helped a major energy provider standardize work management practices across their various business units. A single platform has replaced hundreds of legacy interfaces, enabling enterprise-wide visibility into both assets and services to drive corporate performance. **STOP TALKING START DOING**



IBM, the IBM logo, ibm.com, and Maximo are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2008 IBM Corporation. All rights reserved.

SEE WHY MAXIMO WORKS
ibm.com/doing/maximo