

Nuclear Firms Courting Workers

THE NUCLEAR INDUSTRY has always relied on a highly skilled cadre of engineers, welders and pipe fitters to design and build its power plants. But since the last U.S. commercial reactor came on line in 1996, some of the most experienced workers have retired while many others have moved on to different lines of work.

The brain drain concerns nuclear power executives, who are relying on new construction to pull the industry out of the doldrums. Fearing that utilities will face expensive delays due to a labor shortage, engineering firms and the Nuclear Regulatory Commission are aggressively recruiting seasoned engineers and newly minted graduates to sustain the first phase of licensing.

The question is whether companies and regulators will be able to obtain additional expertise should a dozen or more projects move forward simultaneously.

"It's pretty clear that there is going to be a lag, and there almost has to be. The demand has to get ahead of the supply," said Harold McFarlane, president of the American Nuclear Society, the industry's professional arm. "There's a limited amount of investment that people can put into it just on the basis of speculation."

Engineering companies such as General Electric Co., Westinghouse Electric Co. and AREVA Inc. have been among the most aggressive recruiters, hiring an assortment of engineers to prepare new advanced reactor designs to move through the preliminary stages of the federal licensing process. General Electric, which is developing next-generation boiling-water reactors and typically has 100 vacancies in its engineering division at any time, hired 500 engineers in the past two years and expects to maintain a similar pace this year.

"We've had to get very aggressive," said spokesman Tom Rumsey. "Instead of just going to the university, we are hosting hiring conferences here and flying in candidates."

Westinghouse, which makes pressurized water reactors — including the model AP1000 that utilities are eyeing for a half dozen potential U.S. sites — began preparing for an industry labor shortage a decade ago and intensified recruitment two years ago, as utilities began filing notices to seek operating licenses.

"We expect to hire a minimum of 500 people per year for the next five or 10 years," said spokesman Vaughn Gilbert.

The workers will be responsible for highly specialized work, such as designing the steel vessels for reactor cores that are made with giant forgings that can be made only at a small number of foundries. Designers also are attending to such details as which mix of concrete is most appropriate for the reactor bases and other key structural components.

The specifications will have to pass muster with the Nuclear Regulatory Commission, which has its own manpower concerns. Although the agency is constantly reviewing applications to extend and alter operations for the 103 existing nuclear plants in the United States, the NRC hasn't evaluated a new application for more than 20 years.

The agency expects upward of 20 license applications in the next two years and plans to enlarge its staff from current levels of approximately 3,100 employees to nearly 4,000 by 2010. To lure candidates willing to work for government salaries, the agency has expanded an internship program and increased its recruiting presence at university job fairs. It also is trying to pick off utility workers who have been laid off as part of corporate downsizings.

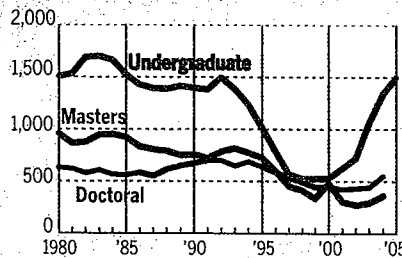
"Whenever a nuclear power plant reduces its workforce, it's not lost on us," said NRC spokeswoman Elizabeth Hayden. "We go out and try to recruit those folks."

The agency so far is getting help from Congress and the Bush administration. The White House's fiscal 2008 budget request would increase the NRC's funding 24 percent, to \$917 million, with much of the extra amount directed at licensing activities.

Back to School

The prospect of a revival in nuclear power generation has prompted more undergraduates to enroll in university nuclear engineering programs.

Student enrollment



SOURCE: American Society for Engineering Education

SURGING ENROLLMENT

University officials say students are already responding to the demand for engineers. Ian Hutchinson, who heads the Nuclear Science and Engineering Department at the Massachusetts Institute of Technology, said most nuclear engineering programs have doubled or even tripled their enrollment in recent years.

"They are essentially voting with their feet," Hutchinson said.

However, the pipeline dries up at the graduate level. University officials say the number of master's and doctoral candidates depends on the availability of federal grant money. Academic officials are upset the White House has proposed eliminating all of the Energy Department's funding of university-based nuclear research, which totaled \$26.7 million in fiscal 2006. The department plans to spend \$16.6 million under the continuing resolution for fiscal 2007. Energy Secretary Samuel W. Bodman has cited the increase in undergraduate enrollment as evidence that the funds are no longer necessary, but Hutchinson said without the money, there will be fewer qualified engineers with graduate degrees.

The Nuclear Society's McFarlane predicts the entire industry will endure growing pains if there is a surge in new plant construction. Reactor-builders will need specially trained welders, metal fabricators and mechanical engineers to create precision parts, as well as special "start-up engineers" who operate untested plants and bring them on line.

Industry officials remain confident that the problems will work themselves out. Randy Hutchinson, a senior vice president at Entergy Corp., said his company is already talking to two-year colleges about training the skilled technicians the company says it will need to move forward with new projects.

"I think we will see some challenges, but they are not insurmountable," he said. "As a matter of fact, we did pretty well the last time when we were doing the building, in the 1970s and early 1980s, on the plants that are operating today." — JEFF TOLLEFSON