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FUTURE WORKFORCE

Purdue sees resurgence in nuclear engineering enrollment

In 2007, Purdue University graduated about 10 percent of all nuclear engineering students earning bachelor's degrees in the United States.

ENROLLMENT IN PURDUE University's Nuclear Engineering Department has burgeoned in recent years as more students see nuclear engineering as a hot career. The increase in the number of nuclear engineering students at Purdue is occurring as the nuclear power industry is looking to add nuclear engineers for its expected renaissance.

"While the demand is mounting, we have a shortage of nuclear engineers," said Vincent Bralts, interim head of Purdue's School of Nuclear Engineering. "The shortage is exacerbated by the fact that many of those in the field are now retiring."

Data from the Oak Ridge Institute for Science and Education show that last year Purdue graduated about 10 percent of all nuclear engineering students earning bachelor's degrees in the United States (39 out of 413) and just over 10 percent of graduate students earning doctorates (nine out of 89). Purdue's Nuclear Engineering Department has flourished as a result.

"This past year we have hired three new professors with outstanding credentials in the materials and fusion area," Bralts said. "Our research has doubled over the past couple of years. We are growing in strength and student numbers, with an industry that is just beginning a renaissance."

Purdue reported in May that enrollment in its nuclear engineering school has near-

ly tripled over the past seven years, with 135 undergraduates in the program last fall, compared with 45 in 2000. There were 46 sophomores enrolled last fall—the largest sophomore class ever at Purdue—and the school is anticipating as many as 40 sophomores in the fall of this year.

Bralts said graduating nuclear engineers are receiving offers of over \$60 000 per year because of the high employer demand. Demand is driven both by Nuclear Regulatory Commission requirements for existing reactors and by a commercial industry that is gearing up for an increase in new plant construction, he said.



Bralts

Lisa Frehill, executive director of the Commission on Professions in Science and Technology, which collects and analyzes data on the science, engineering, and technology workforce, said the concern among those in the nuclear engineering field is how they will fill the expected future jobs. A projected 15 to 30 new nuclear plants could be constructed in the coming years, she said, at the same time that roughly 30 percent of the current nuclear engineering work force is getting ready to retire.

"I think nuclear engineering will be such a growth area," Frehill said. "I recently learned about the planned increase in nuclear plants and my first thought was, 'Will

we have the nuclear engineers to actually do this?' What some are saying is that we might have to import them from Russia. When you look at the price of oil today, you

know it's not sustainable. When you talk to the people in nuclear energy, they are very positive right now."

The number of nuclear jobs is expected to grow over the next five years because of the wave of nuclear engineer retirees, and will continue to grow rapidly if more energy companies move forward with plans for new nuclear plants.

"Construction of new nuclear capacity will have to be an international effort since the resources necessary will have to come from the global economy," said NRC Commissioner Peter Lyons. "The domestic workforce requirements are an enormous challenge, particularly since much of the experienced labor that built the last nuclear plants in the United States has reached retirement age."

Lyons said that the NRC is partnering with universities in an effort to train much-needed nuclear engineers by providing funds and undergraduate and graduate fellowships. He said that well-trained professionals with an eye on safety will be an important element of the nuclear resurgence.