PPL Power Lab readying Penn State students

Industry partners combine to provide hands-on learning at PSU's Harrisburg campus

PPL Corporation

Engineering students interested in careers in the rapidly changing electric utility industry will have a leg up on the competition when they graduate from Penn State Harrisburg, thanks to unique hands-on training in the college's state-of-the-art PPL Power Lab.

The lab was established recently with equipment, software, and monetary donations valued at nearly \$200,000 from PPL Corporation and leading electric utility suppliers. The facility is located on the ground floor of the Olmsted Building at Penn State Harrisburg's 218-acre campus where 4,200 graduate and undergraduate students are enrolled. The lab features the same equipment utilities use to operate, control and protect the nation's electric delivery system.

Mukund Kulkarni, chancellor, said the PPL Power Lab enables the university to build on its reputation as a center for energy systems and a key provider of future employees for the electric industry.

With its School of Science, Engineering and Technology, Penn State is the only accredited collegiate program in the region with courses in power engineering and one of only eight such universities in Pennsylvania. The school offers study leading to bachelor's degrees in electrical engineering, electrical engineering technology, environmental, civil and mechanical engineering, and related fields.

"We are grateful to PPL for taking the lead on this project, and to ABB Inc., NovaTech, LLC and its Bitronics unit, Operation Technology, Inc., Schweitzer Engineering Laboratories and Omicron Electronics. These companies not only donated equipment and other teaching and learning tools to the college, but also provided training and seminars to our faculty and staff along with internship experiences for our students," said Kulkami.

Peter Idowu, associate professor of electrical engineering, said power engineering students will have access to industry standard equipment, like high voltage circuit breakers, digital controls, protective relays, automated switching devices for transmission and distribution systems, and similar hardware, which will help "shape the curriculum and provide invaluable real world experiences for students."

"We are now designing senior projects around our equipment, incorporating its use into our courses, and using it to conduct experiments," said Idowu. "Previously, in a course, for example, students could learn about system dynamics using only software simulations; now they can learn directly on the very same systems used by the industry to ensure our electric reliability."

The electric utility industry is facing a workforce transformation with as many as half of its workers eligible for retirement in the next five years. "We are actively recruiting our next generation of employees, the future of PPL's power generation and utility businesses. The demand is great for educated young people who can contribute with the specialized training we need in our industry," said Don Bernhard, director of Community Affairs for PPL Corporation, which expects to hire 300-500 new employees annually over the next several years.

"We are pleased to partner with PSU in a significant way that enhances its power engineering curriculum and can provide a pipeline of potential employees for companies like PPL," said Bernhard.

Jerry Shoup, director of the college's School of Science, Engineering and Technology, said the power lab raises PSU Harrisburg's engineering courses to a new level. "It is very unusual for college engineering courses to have this type of equipment due to the cost. Our students benefit from hands-on learning opportunities along with faculty with extensive industry experience. Our partnership with PPL and our relationships with private industry are crucial to providing aspiring engineers with the knowledge and practical experience needed to successfully join the workforce."

Many Penn State graduates are employed with PPL in a wide range of roles, and they have kept strong ties with

their alma mater. Through its matching gifts program, PPL employees and the company donated more than \$275,000 to the university in 2010.

PPL Corporation, based in Allentown, Pa., is one of the nation's leading electric utilities, delivering electricity and natural gas to 10 million customers in the U.S. and U.K. and generates and sells energy in key U.S. markets. ABB, Inc., of Lake Mary, Fla., is a global leader in power and automation technologies for utilities and other industries. NovaTech – Bitronics, Quakertown, Pa., provides measurement, automation, and integration solutions for electric utilities. Operation Technology, Inc., of Irvine, Ca. is the developer of ETAP, a comprehensive power system software. Schweitzer Engineering Laboratories, based in Pullman, Wash., designs, manufactures, and supports products and services for electric power systems.

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