

Power Sector Must Court Students

INDUSTRY MUST COMBAT IMAGE PROBLEMS
BY WANDA REDER

At last, most power industry leaders are now aware of the workforce facts. At least 20 percent and in some cases up to 40 percent of power industry employees in North America will be eligible to retire in the next five years. Replacement hiring is underway, though the demand for talent will very likely exceed supply.

It is important that the industry work together to promote the power industry image to develop the technical talent pipeline. Targeted efforts are needed early on with middle schools and high schools to generate interest in math and science selections and to introduce the power industry as a career option. At the college level, power needs to be more visible to attract the budding engineering talent. Students often do not consider power because its visibility as a career choice has been minimal. In addition, many perceive the power industry to be boring and stagnate, so it's becoming more important to showcase technologies, system complexities and recent changes to generate interest and create industry excitement.

Attracting and developing talent requires a long-term focus and dedication to the cause. The future labor pool profile will be much different than it is today, reflecting a greater ethnic diversity and participation by women in the engineering workforce.

To reach middle school and high school students, employers can work with the local IEEE Power Engineering Society Chapter to identify engineers who are eager to share their experiences in power engineering, emphasizing the creativity, social importance, and gratification that has resulted from utility work. It is particularly important to reach those in middle school, when career images are being formed and decisions are being made regarding the pursuit of high school mathematics, which is a prerequisite to an engineering education.

Adolescent awareness in the power industry can also be generated through promotional efforts. National Engineers Week is an opportunity to showcase power engineering by creating awards for student achievement. Employers can sponsor science fairs and technical knowledge bowl competitions. The winners of competitions can be offered awards, summer jobs or scholarships. Participating in "Take Your Kids to Work Day" tours and science projects can generate interest in science and power, and many more examples of experimental projects are on the Web to generate student interest. Employers can also work with high schools to

initiate and actively participate in career days and support job shadowing, mentoring and mock interview opportunities.

In addition to working with middle schools and high schools, it is also important to develop university relations and hire graduate engineers year-after-year. Unlike the power industry, some industries have continued to hire in high- and low-profit years, to maintain a solid academic infrastructure with a predictable supply of talent. But the power engineering education foundation is at risk partly because of the limited hiring in recent years. As a result, many universities are having difficulty maintaining power curriculums and shifting focus into other curricula. Power industry employers need to strengthen their relations with educators to ensure power systems classes are offered. In some cases, employers may need to underwrite classes to ensure they are available and develop professors who are knowledgeable about the industry through research and consulting opportunities.

Currently, only about 1 percent of engineering graduates select power as a focus in the United States, due to the lack of needed courses and the low awareness of the industry. With engineering enrollment on the decline, the power industry is fiercely competing against other industries for student interest. The interest of students pursuing engineering is easily drawn towards disciplines where there is visibility of emerging technologies. Currently, the power industry is seemingly invisible at universities; meanwhile HP, Sun and Cisco, for example, regularly donate equipment and make grants available for research and laboratories. To encourage more engineers to select power as a career choice, employers can work with faculty and donate equipment, convey hiring needs, develop research initiatives, influence curricula, sponsor internships and offer scholarships.



IT IS IMPORTANT THAT THE INDUSTRY WORK TOGETHER TO PROMOTE THE POWER INDUSTRY IMAGE ...



Industry also needs to connect with undergraduate and graduate students through technical and social interaction to develop an innovative and exciting industry image. Connection can be achieved by making presentations on the complexity of the power system, discussing real problems that need solutions and highlighting the impact that a reliable system has on society. It is especially important to make contact with student engineers within their first two years when they are still choosing their focus area and applying for coop positions. While most organizations are challenged with maturing workforce trends, the power industry is especially at high risk due to industry image, high retirement attrition rates, (continued on page 24)

(continued from page 21) a relatively small labor pool, and an educational foundation in jeopardy. Developmental time for a technical workforce takes years. Ensuring the availability of a skilled workforce will be critical for a secure and reliable power system in the future. The industry's future depends on its ability to anticipate what lies ahead and develop necessary skilled resources.

Wanda Reder is the incoming president-elect of the IEEE Power Engineering Society and vice president of S&C Electric's power systems services division.



Pioneering Solutions

REPORT FROM A MARYLAND HIGH SCHOOL
BY CLARK W. HAND

I teach engineering courses at a high school with a wide range of resources and a student population covering just about every segment a high school could have. Not only does the school serve a mixed-community area in Silver Spring, Md., but it also is home to Montgomery County's two "magnet" programs, one a nationally recognized math, science and technology program that draws the county's brightest students. Our resources to teach these magnet students are commensurate with their needs and capabilities.

I've recently become aware of a looming and massive set of changes in our energy industry. Not only is our professional population aging, so are other resources, such as fossil fuels. According to experts, many utility jobs are going unclaimed or are very difficult to fill, as few youth have exposure to the industry. This shortage covers the global renewable energy field and electric utilities. This is a dangerous situation, given our increasing use of energy to run our economy and our lives.

This school year, we are going through a transition from more of a traditional "shop" course to a much more sophisticated engineering or technology course. We are starting with a focus on preparing students for entry-level jobs appropriate for youth who have not yet achieved a college degree. As I've worked on my curriculum transition, I've begun to encourage students to work on projects in two areas. The first is to work on a project of



MEMO FROM HR

"Staffing for utilities in general has become more challenging. We are all competing for the same dwindling resources because less people are moving into these types of jobs. We need to start building programs in high schools to channel people into trade or technical schools."

JEANNE MYERS // ALLIANT ENERGY

"Our industry has not done a good job portraying an open-door policy to the public. We are our own worst enemy because we are looking for candidates who are too perfect."

RALPH CRUZ
COLORADO SPRINGS UTILITIES

"We'll have to be creative in how we utilize that manpower that will be walking out the door. We'll need to be flexible with how we use retirees for part time and consulting. We anticipate a shortage in experience."

MIRIAM CORBIN
MARIETTA BOARD OF LIGHTS & WATER