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Member Best Practices

KCP&L Summer Camp Encourages STEM Interest in Rising Freshmen

It's no secret that American students rank below average in math among the world's most developed countries, and hover around average in science. It's also no secret that those rankings have been falling over recent decades.

Part of the problem, employers often note, is that many students don't seem interested in pursuing math or science classes once they get into high school.

Kansas City Power & Light (KCP&L) has been working to reverse that trend through a hands-on Get Into Energy summer camp for incoming high school freshmen. "As they enter high school, many students don't continue pursuing math and science, either because they don't relate to it, think they lack aptitude, or don't see how it will ever be used in the real world," notes Sarah Whitman, Manager of Technical Training, KCP&L. "By providing activities that are creative and fun as well as a tangible, practical connection to career options, the camp gives them better information from which to make choices. And in the long term, more students with solid foundations in math and science will create a larger, more diverse, and better qualified workforce pipeline for the industry."

The camp, now in its fifth year, gives students and KCP&L employees opportunities to interact and explore energy careers through hands-on experiments that demonstrate the concepts of magnetism, physics, and electricity. KCP&L employees also take the students on field trips to a local power plant and substation to see how science works in the real world and the role it plays in the energy industry.

"We set out to create a fun, interactive summer camp where students can explore the basics of transforming energy, get a firsthand look at how electric energy is delivered to their homes and communities, and speak with energy employees about exciting career opportunities in their industry," Whitman said.

The camp is free of charge and offered to students who don't have a lot of other opportunities for enrichment during the summer months, Whitman continued. "We focused on the central city. This is not another camp opportunity for kids in thriving districts with lots of options; this is for kids who have potential but don't necessarily have an abundance of activities to choose from. To date, we've had a 50-50 split between boys and girls each year."

Though it's only January, KCP&L is already starting to prepare for this year's camp by meeting with key partners, such as the KC STEM Alliance (a collaborative network of educators, business partners, and organizations that inspires interest in STEM careers) and the University of Missouri-Kansas City School of Computing and Engineering, which hosts the camp. The STEM Alliance provides logistics and support, such as a template for running successful camps. KCP&L oversees the program and manages its employee volunteers, who speak to students about energy careers, help with labs, and take the students on field trips.

KCP&L also contributes several thousand dollars each year to sponsor the camp, paying for items such as T-shirts, counselor salaries, transportation, and food.

According to Duane Anstaett, Vice President of Delivery, KCP&L, "Get Into Energy Camp is one of the ways that KCP&L engages with youth and our other partners to increase the number of students pursuing STEM careers in our communities. We believe this camp is a fun way to expand students' awareness of careers in energy and hope that as part of this experience, at least some of the students will become part of our diverse and technically skilled future workforce. If not here at KCP&L then at the least they'll be employed in a STEM career somewhere in the region."

KCP&L has graciously contributed a toolkit for CEWD members to replicate the camp in their areas. The toolkit can be found at <http://www.cewd.org/gie-camp/>.

Creating a Legacy for Arizona High School Students

Energy industry professionals represent some of the best and the brightest this country has to offer. But, notes Deon Clark, CEO, TCI Solutions, LLC, they also overwhelmingly represent a single demographic: white males.

"There are few women and few minorities," he said. "The question that I raise is how did they become the best? What level of exposure did they receive, what training did they undergo, and what support systems did they have in place to allow our existing energy workforce to be as good as it is? If we know what has made them the best, we should be able to recreate those components and give those resources to female and minority students and, in theory, they should perform as well. Give them these things, and you should see the exact same result regardless of race, gender, or economic status."

And so was born the Legacy I-3 program—a partnership with TCI Solutions, LLC (TCI); Arizona Public Service (APS); Salt River Project (SRP); the Phoenix Unified High School District (PUHSD); Valley of the Sun United Way (VSUW); Palo Verde Nuclear Generating Station (PVNGS); and A New Leaf (ANL), an Arizona nonprofit organization that helps disadvantaged families.

Clark, a former Senior Nuclear Reactor Operations Instructor who received his training in the Navy and at Exelon Nuclear, created the Legacy I-3 program. It includes all the components he believes are necessary for students to succeed: secondary and postsecondary education alignment, industry mentoring, and wrap-around support services that fill the gaps for students and their families that can interfere with their ability to focus on the education and training they need to reach their fullest potential.

The Legacy I-3 pilot program, launched in January, will provide students with life skills and resiliency training, health and wellness training, financial literacy and workplace-readiness training, and exposure to the various energy-related careers. It will help them to obtain industry-recognized credentials that can put them on the path to high-paying careers in the energy industry, Clark said.

The 60 students chosen for the pilot program had to fill out applications, undergo interviews, maintain a minimum grade point average of 2.5 or higher, and, most importantly, make a family commitment to the program that will allow the student to participate for nine hours every week, after school and on weekends, through June of this year.

“They have to get family permission,” said Clark. “The family undergoes an evaluation to determine what needs they may have that are not being met that could interfere with the student’s participation. If something happens with the family, if the family is hurting, the student will feel the impact and possibly drop out. So we do an evaluation so that we know exactly what that family needs so we can give it to them, so that the student can stay the course.”

That might be money to pay some bills, childcare, assistance with immigration status, or transportation, for example. These needs are met by the VSUW, said Clark.

APS provides mentoring for the students through a career ambassador program and by providing an executive sponsor who shares a passion for the work Legacy is doing, as well as a commitment to preparing a more diverse workforce for the company’s future needs.

“Investing in our communities is a core value for APS and has been for many years,” said David Hansen, Vice President of Fossil Generation, APS, and the program’s executive sponsor. “The Legacy pilot program is an extension of that effort, along with developing a qualified future workforce. As a product of inner-city schools, I can relate to the benefits and possibilities that are created by giving these students opportunities they otherwise wouldn’t have. This is a phenomenal program and I’m very happy to be a part of it.”

In addition to Hansen, selected APS employees from all levels of the company will participate with students and their families, said Geri Mingura, Executive Director, Workforce Development Partnerships and Pipelines, APS. Trained by Clark and the TCI Professional Development Training Group, the ambassadors provide mentoring to the students, talk to them about energy careers, and give them real-world work problems to solve so that they understand what it’s actually like to work in the industry.

“We understand that a lot of our youth are not aware of the diverse careers available in the energy industry and we wanted to provide that exposure, and also help educate them on energy industry fundamentals,” Mingura said. “The work Legacy is doing fits nicely into what we wanted to accomplish.”

The students will be taught CEWD’s Energy Industry Fundamentals course and earn the SkillsUSA Energy Employability Skills certification, the National Career Readiness Certificate, and the OSHA certification, Clark said. They’ll also get a “money smart” financial literacy certification provided by the FDIC, a Legacy Character and Logic Development certification, and a Health and Wellness certification. They will also take the Get Into Energy Math and Test Prep Workshop Clark developed for CEWD and be prepared to take the EEI pre-employment tests. Finally, students will be given resume writing and interview training and the opportunity to job shadow and take site tours at APS, PVNGS, and SRP.

At the end of the seven-month pilot (which will be expanded into a nine-month program next year), students will be prepared to apply for entry-level energy jobs or to go on to earn postsecondary degrees, said Clark. The entire program is free of charge to students and their families.

How will they pay for their future education? Through one more component of the program: A New Leaf is setting up Individual Development Accounts for the students that triple student contributions, Clark said. For example, if a student can save \$25 a month for six months, A New Leaf will add \$450 to the account. They will triple savings up to \$1,000 (turning it into \$4,000) to help students pay for community college and/or university degrees.

TCl's role is to make sure all of these components come together and nothing falls through the cracks for the students, said Clark, who hopes to see the program replicated in other cities and states. "All of these components—high school, postsecondary education, industry, and wrap-around services from the United Way—are already there in most places but have never been put together. Every state has those four pieces. The fifth piece is TCl.

"We're just replicating what we know works," he said. "If you're serious about diversifying our industry, this is what works."

Black Hills Educators' Summit Models Utility-Educator Relationship

Like most utilities, Black Hills Corporation faces substantial hiring needs over the next five years, as employees who pushed off retirement during the recession begin to exit the workforce in large numbers. That's why they recently came to the conclusion they needed to ramp up their relationships with the institutions that train the candidates who will replace those retirees.

"We did a formal workforce planning process and determined we had a critical business need to replace technical workers," said Russ Trinter, Director of Employee and Labor Relations, Black Hills. "The assessment of needs led us to a process of evaluating and ranking the schools in our geographic footprint to determine which schools we wanted to build a stronger partnership with."

To do so, the company put together an internal team, including representatives from Human Resources and each of its seven utilities. They identified all of the technical schools and community colleges in the company's geographic footprint, defined the programs and curriculum they needed to hire from, brainstormed over the traits and attributes they valued in these educational institutions, and then ranked the schools against those attributes with the help of their continuous improvement expert.

The schools had to offer one or more of Black Hills' desired programs or degrees, said Trinter, including an electrician program; HVAC/appliance program; power line program; propane/gas program; substation program; and SCADA/automation program. They also considered accreditation, curriculum quality, and retention and graduate rates, along with the institution's current relationship with Black Hills if one already existed.

In the end, they identified 10 schools that met their criteria and invited them to an Educators' Summit last November. The schools invited were Mitchell Technical Institute, Barton County Community College, Marshalltown Community College, Northeast Iowa Community College, Northeast Nebraska Community College, Northwest Iowa Community College, Rocky Mountain Lineman School/Trinidad State Jr. College, Seward Community College, Southeast Nebraska Community College, and Wichita Technical Institute.

"The purpose of the Summit was to provide the educators with an overview of Black Hills Corporation and the strategic workforce planning process we are conducting, and how our relationships with our education partners factor into the bigger workforce planning picture," Trinter said. "The Summit gave the educators an opportunity to understand what's important from the employer perspective and the educators had the opportunity to tell Black Hills what they needed from the company."

Trinter said Black Hills also offered sponsorship to each of the schools that attended as members with CEWD. A representative from CEWD attended the Summit and provided educators with an overview of the tools and services they provide to educators that partner with industry.

Trinter said Black Hills hoped to replicate among these schools the relationship it already has with Mitchell Tech, where they have representatives on the school's advisory boards and have helped shape curriculum for programs that train students for jobs in the energy industry.

"We have relationships with a variety of schools," said Trinter, "but none as developed as with Mitchell Tech. This is our touchstone relationship."

Greg Von Wald, President, Mitchell Tech, described the school's relationship with Black Hills as "a partnership."

"They help guide our curriculum so that they get what they need in terms of job applicants," he said.

In addition to sitting on advisory boards for energy-related programs, Black Hills provides used equipment taken out of service and donates to a fund that purchases new equipment needed to teach the classes, offers internships, and ultimately hires their graduates, said Von Wald. They also attend high school recruiting events with Mitchell Tech, sending linemen and technicians to give students hands-on exposure to the kinds of jobs they'd be doing at Black Hills and to encourage them to pursue careers in the energy industry.

CEWD reinforced the strong partnership between Mitchell Tech and Black Hills when it selected the two as part of a group charged with identifying an introductory set of core technical competencies for electric and gas programs. These core competencies and the courses that support them can now be used by community colleges to develop "technical major" programs as needed by the industry.

"They tell them about the company and what it's like to work there," said Von Wald, "and we show them how we would teach them to become a lineman or other skilled worker. It works really well."

CEWD's Energy Fundamentals Now a Certificate for Virginia High School Students

Starting this fall, students at some Virginia high schools will be able to enroll in a course that allows them to earn a Virginia Energy and Power Certificate, positioning them as more competitive applicants for entry-level energy industry jobs.

The certificate, which is built around CEWD's Energy Industry Fundamentals (EIF) course, is the result of two years of collaborative work between the Virginia Department of Education and the Virginia Energy Workforce Consortium, said Leilani Todd, Vice President of Human Resources, Mecklenburg Electric Cooperative, and Chair, Virginia Energy Workforce Consortium.

Two parallel processes were taking place, she said, that led to its creation: efforts by the consortium to encourage creation of a 17th career cluster for energy, along with efforts by the Department of Education to review and revise an old energy and power course that was no longer being utilized.

"Two things were going on at once, and then they collided," she said.

Lynn Basham, Technology Education Specialist, Virginia Department of Education, said she connected with consortium members in order to put together a business panel that could revamp the old energy course, which no longer suited the industry's needs. Her colleague had been working with the consortium on a number of other workforce development efforts.

Through the consortium, she learned of the EIF course and credential. “It sounded to me like the direction we needed to take the power and energy course,” said Basham. “The old course obviously was not serving its purpose and there were obviously new industry needs we might be able to serve using CEWD’s materials.”

Basham said the committee created its own curriculum structure, built largely around EIF, and recommends that those teaching the certificate program use EIF course materials. Additional material, specific to Virginia (such as the amount of power that different power lines hold), was also added. The EIF program provides a broad overview of the energy industry, along with several industry-recognized credentials. Five schools have already indicated they will teach it during the next school year.

Schools interested in offering the EIF credentials must be approved to do so, Basham said, and must also partner with a utility. In Virginia, the course will also be paired with another class, such as Renewable Energy or Sustainability and Renewable Technologies.

“From the industry standpoint, when you see that an individual has that certificate, you know they have made an educated decision to get into this industry,” said Todd. “It’s important that students understand what they are getting themselves into, really, before they go to work for a utility. It’s a win-win. The student understands how broad the industry is, and the multitude of careers available to them, and can determine this is really a career path they want to venture down.”

Once they earn the Energy and Power Certificate, students can continue with postsecondary education or apply for entry-level energy jobs, Todd said.

The consortium is now working on creating a pathway that shows which jobs become available to students who earn the certificate, which jobs require additional education (and how much), which schools offer relevant programs, and other important information. They hope to have the information included in a state Department of Education online program called the Virginia Wizard, which helps students learn about career pathways.

“We’re in the process of putting this together, working with community colleges to get the information we need,” said Todd. “We want to show students what the certificate will gain for them.”

Upcoming

Northwest Regional Meeting

April 14, 2015
Portland, OR

South/Southeast Regional Meeting

May 5, 2015
Savannah, GA

Midwest Regional Meeting

June 24, 2015
Chicago, IL

National Energy Education Network Meeting

June 25, 2015
Chicago, IL

West Regional Meeting

July 23, 2015
Location TBD

MidAtlantic/Northeast Regional Meeting

July 29, 2015
Location TBD

Careers in Energy Week

October 12-18, 2015

National Forum

November 4, 2015
Arlington, VA

Annual Summit

November 4-6, 2015
Arlington, VA

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