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The Technician Beneath Our WINGS

or is that **BLADES?**

BY LEE COLONY AND JOHN FOSTER

Today's trained technicians in alternative energy fields are finding even more career opportunities open to them as the United States and the world turn to green technology to power their homes and businesses. Wisconsin's Gateway Technical College is preparing students for those new and emerging "green collar" careers. Gateway has taken a leadership position in training for ge-exchange heating and cooling systems, the wind power industry, sustainable energy systems and fresh water resources. In each case, Gateway has found an area of the career with training needs—and

found a way to address it. As an example, Gateway's torque and ge-exchange drilling training was found to be a skill in demand. After Gateway finalizes development of the program, it will be shared across the nation through national curriculum development and training of other instructors.

Gateway's Wind Energy courses are another example of green career development. These courses follow Wisconsin Technical College System-approved curriculum and core competencies, giving students a foundation for future training and career development. Students receive training in wind theory, energy of

wind, turbine siting, technology, design and construction of large and small wind turbines. From there, they can focus their education and training, through Gateway Technical College, on the skills that best meet their career goals.

"The intention of this program is to give students some understanding and knowledge about the wind industry and then explain to them some of the specific career paths available to them," says Gateway Technical College Wind Energy instructor Bob Braun.

Braun says because of the emerging nature of the wind industry, career paths are less clear than more traditional

careers—but points out that that may mean even more opportunities in the near future in the years that lay ahead.

“Those career paths are becoming more defined as the industry grows,” says Braun. “We are identifying those career paths which best prepare our students for the job market.”

Braun points out the wind industry requires a variety of skills. Large wind projects often need a larger team of technicians with specific areas of expertise. Technicians in torque, hydraulics, pneumatics, programmable logic control, engineering, construction and even marketing are needed to create, build and maintain wind energy projects. Small wind systems typically require a small team of individuals with a broad base of skills. The entry-level technician will likely be required to climb turbine towers that are 250 feet high, so safety and climbing are of utmost importance.

Assessing Skill Competencies

NOCTI (formerly the National Occupational Competency Testing Institute) sensed the industry’s need to be able to adequately assess the overall skills of an individual either starting a program as a wind technician or completing a training program as a wind technician. NOCTI assessed the needs of the education field and began a dialogue with a variety of industry resources including AWEA (American Wind Energy Association).

NOCTI began to participate with AWEA’s education working group, and AWEA was able to help NOCTI locate subject matter experts from a variety of educational institutions and industry in the United States and Canada; the experts could work as a team to develop an assessment that would be reflective of the current knowledge of the field, and measure the competencies needed by an entry-level wind turbine technician.

Generally speaking, the written and performance tests cover the areas of safety (both written and performance),

equipment operation, electrical systems, mechanical systems, appropriate hand tool usage, equipment maintenance, technical writing and computations, start/stop switching motors, materials and fasteners, and torque. Within these general topics are embedded specifics like laser shaft alignment and programmable logic control boards, as well as the rigors of safely climbing a wind turbine tower. Each test item is linked to a specific test area to ensure the test measures the competencies needed by an entry-level wind turbine technician. Like Gateway’s program, NOCTI’s assessment covers the basics of the industry.

“Gateway is currently a NOCTI assessment center and believes in the value of occupational skill credentialing,” says Gateway Technical College President Bryan Albrecht. “Expanding the NOCTI assessments to emerging industries like wind and geoexchange will enhance Gateway’s ability to certify technicians. I am pleased that NOCTI is playing this important role for America’s workforce training systems.”

Braun points out that the skills and career opportunities needed in the industry are more than just technical—marketing specialists knowledgeable about the industry are needed to work with consumers as well as local governments to meet all necessary regulations. Some students may discover they already have skills from former careers, and NOCTI’s assessment may be an excellent diagnostic vehicle.

“Displaced workers are already coming in with skills that can be used in the wind industry,” says Braun. “They go through our wind courses and see how their skills can be applied in that industry, or where they need additional training to fast track their careers.”

Braun says Gateway is developing certifications in wind energy-specific applications—such as torque technology—but points out that existing certifications within specific technical careers apply as well.

“The field of alternative energy is growing quickly in its technical complexity, and Gateway wants to do its part to contribute.”

“Everyone who comes through wind courses will receive torque certification,” says Braun. “We talk about the importance of bolting and using proper turning force. Wind turbines are a very complex machine, and technicians who work on turbine systems need to know the consequences of improper use—or torque—and the correct way to work on turbines. We teach students at certification standards so they can achieve certification.”

Meeting the Demand

Like much of the technical skill training that Gateway performs for its constituents, there is an underlying assumption that these programs will benefit the individual and the economy. That is one of the reasons Gateway makes use of awareness programs with surrounding secondary education programs and “bootcamp” training programs to upgrade dislocated workers quickly.

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