Competency Models In Action:

Wind Turbine Manufacturer Develops Wind Competency Model Using Advanced Manufacturing Model as Foundation

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Introduction

As part of the Industry Competency Model Initiative, the Employment and Training Administration (ETA) collaborates with industry partners to develop models of the foundation and technical competencies that are necessary in economically vital industries of the American economy. The goal of the effort is to promote an understanding of the skill sets and competencies that are essential to educate and train a globally competitive workforce.

Completed in 2006, the Advanced Manufacturing Competency Model was the first industry competency model finalized as part of this undertaking. Since then, the Advanced Manufacturing model has served as the foundation for competency models and other resources in many manufacturing sectors, and informed the development of models in several related industries, including Automation and Mechatronics.

Clipper Windpower is a California-based wind turbine manufacturer and wind project developer. This *Competency Models In Action* describes how the company developed a wind turbine manufacturing competency model using the Advanced Manufacturing Competency Model as a foundation, and how the new model is being used as a framework for recruitment, employee development activities, and skill gap analysis.

The Workforce Need

In 2008, the U.S. wind energy industry brought online over 8,500 megawatts of new wind power capacity, increasing the U.S.'s cumulative total by 50%, and pushing the U.S. ahead of Germany as the country with the largest amount of wind power capacity installed. This recent growth is creating new green jobs—the American wind energy industry added an estimated 35,000 jobs in 2008 for a total of 85,000.[1] Many of these jobs are in turbine component manufacturing, where the share of domestically manufactured wind turbine components grew from under 30% in 2005 to 50% in 2008. Wind energy jobs are also being created in other areas such as project development, construction and installation of wind turbines, wind turbine operations and maintenance, and legal and marketing services.

Despite the industry's recent growth and the high number of U.S. job seekers, many wind energy employers are having trouble finding enough qualified applicants. The wind industry has recognized the need to address this workforce challenge by creating new wind educational programs and developing the existing ones. Industry, education, and professional associations

[1] *Annual Wind Industry Report 2008*, American Wind Energy Association, http://www.awea.org/learnabout/publications/loader.cfm?csModule=security/getfile&PageID=5094.

have been collaborating to develop new curricula, assessments, and other resources to support these programs.

In June 2009, the American Wind Energy Association held a workshop as part of its efforts to establish a skill set for wind turbine technicians. As an employer of wind technicians, Clipper Windpower participated in this initiative alongside its own workforce development efforts. Clipper managers had recognized the need to improve their recruitment, training, and other workforce capacities. They needed new resources to organize and guide their efforts.

Solution: The Wind Turbine Manufacturing Competency Model

Clipper often hired and retrained dislocated workers who had little or no experience in the wind industry. Many of these workers had learned relevant skills in the military in fields such as avionics and nuclear propulsion. Though they came from outside of wind energy, these workers possessed strong foundational and manufacturing competencies which allowed them to be successfully trained in wind energy skills.

Clipper recognized that the Advanced Manufacturing Competency Model successfully defined many of the critical foundational and manufacturing competencies they required. However, they needed to develop the model further to customize it for the wind industry and the needs of the company. As a result, Clipper decided to build a wind turbine manufacturing competency model, which would be applicable to multiple occupations within the company.

To get started, Clipper used the Build a Model Tool on the Competency Model Clearinghouse.[2] Clipper selected the Advanced Manufacturing Model as their starting point. After making minor changes on Tiers 1—4, Clipper designed a new Tier 5 specialized for the wind turbine manufacturing sector. This Tier includes eight competency blocks:

- Sales and Marketing
- Product Design
- Product Configuration
- Procurement of Materials
- Materials Management
- Assemble and Test
- Order Fulfillment
- In Service

These competencies represent major parts of the life cycle of a wind energy project. Each competency block is supported by a definition and a list of work functions and content areas. Clipper also developed a 9th Tier of Management Competencies that includes 10 competency blocks:

[2] The Competency Model Clearinghouse is a Web site sponsored by the Employment and Training Administration that showcases industry competency models. The Build a Model Tool was designed to help businesses, educators, and workforce professionals achieve their talent development goals. It allows users to choose one of the existing Industry Competency Models as a framework and select appropriate boxes to add competencies and key behaviors to create a new customized model.

- Developing an Organizational Vision
- Strategic Planning and Action
- Motivating and Inspiring
- Developing and Mentoring
- Monitoring and Controlling Resources
- Monitoring Work
- Managing Conflict and Team Building
- Networking
- Delegating
- Entrepreneurship

Intended to be used within the company, the model was validated by Clipper managers and employees. The model will be used as a framework for many recruitment and employee development activities. It is being used for skill gap analysis, as a framework for developing training materials, and as a framework for targeted training. Clipper reports that the foundation competencies, especially, will be useful for performance counseling with employees.

Clipper is in the process of linking the competencies to existing curriculum and job profiles. The next step will be to construct a database populated with the competencies, related proficiency assessments, job descriptions, career ladders, and work experience. The database will align these resources with more than 20 occupations and occupational classes within the company. With the competency model serving as its framework, the database will use a Web interface to connect Clipper's job profiles with individual development plans and employee evaluations. These tools will help Clipper Windpower recruit and train the workers the company needs.

For more information, and to view Clipper Windpower's wind turbine manufacturing competency model and the Advanced Manufacturing Competency Model, visit the Related Links below.

Related Links

Wind Turbine Manufacturing Competency Model (download requires free Workforce3One account)
http://www.workforce3one.org/view/2001002141698881385/info

Clipper Windpower
http://www.clipperwind.com/

Advanced Manufacturing Competency Model
http://www.careeronestop.org/competencymodel/pyramid.aspx?HG=Y

Build a Model Tool
http://www.careeronestop.org/competencymodel/careerpathway/cpwoverview.aspx