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CORE SKILLS FOR MANUFACTURING WORKERS MSSC STANDARDS AND CERTIFICATION

Presenter – Joseph W. Hurst, Ph.D., Director, WisPASS program, Milwaukee Area Technical College (MATC)

Premise:

Technology, globalization, and de-regulation are powerful forces driving economic change. Together, they are bringing about a “new economy” in America. This is characterized by new core industries, different sources of wealth, extremely dynamic markets, new forms of competition, new roles for government, and new investment needs. These forces, which are altering the economic landscape, in turn have significant implications for education, training, work, and the demand for a skilled talent pool of technologically literate workers.

Changes over the past several years have forced organizations to reinvent themselves and individuals to re-educate themselves. No company or employee can afford to ignore today’s workplace challenges, including the shifts from traditional job roles to innovative training that assesses and develops new human capacity.

The new economy is an environment of constant change. It places value on broad knowledge and skills, flexibility, cross-training, multi-tasking, teaming, problem solving, and project based work. Organizations today have an underpinning of technology that supports the very basic systems of their operations from the front office to the production floor. Workers are expected to be engaged in technology, work in a teaming environment and take responsibility for quality control throughout all aspects of their job.

Workers in the “new economy” must possess the ability to learn and to re-tool continually throughout a career. The traditional, vertically integrated institutions which used to provide training for employees within internal labor markets have now eroded and are no longer functional. Alternative career pathways have to be built outside of individual organizations, and establish across whole economic sectors and external labor markets, to help the workers of today and tomorrow master the new creative and technological challenge they will constantly face.

Consequently, the way these knowledge and skill requirements are delineated and communicated must also be modernized and standardized to a degree that goes beyond single firms and extends across the entire economic landscape.

Response - Skill Standards:

The Manufacturing Skill standards Council (MSSC) is comprised of individuals from leading companies, unions, education, and other public interest organizations, representing all manufacturing industries, making it the largest organization of its kind. Together, volunteers from these organizations participated in the research to develop the skill standards that identify the skills and knowledge needed by today's production worker to succeed, and for U.S. industry to compete globally. Individuals who test well against the MSSC standards may attain portable credentials, reflecting that they meet the minimum proficiency levels that satisfy rapidly shifting manufacturing and employment needs.

About 4000 workers from 700 companies, 300 subject matter experts and 30 support organizations worked diligently to develop MSSC production worker skills standards. Subsequently, a team from the National Occupational Competency Testing Institute (NOCTI) and Raytheon assembled a validated, online assessment protocol. It is a multiple-choice test, combined with a computer-simulated exercise, comprised of four modules that in aggregate set the minimum requirement for a worker to gain certification. The four areas of concentration (modules) are safety, quality, manufacturing process and maintenance.

The Skill Standards Assessment:

The *structure* of the skill standards is based on a hierarchy of *Critical Work Functions*, or major responsibilities in each area of interest (such as Production), *Key Activities* that outline embedded duties and tasks, and *Performance Indicators* that actually indicate competency in that key activity. (See examples below.) The tests are designed to measure knowledge and experience in three levels of interest. These are academic – math, science and reading, etc., employability – teamwork, problem solving, customer response, etc., and technical – using inspection tools, knowledge of manufacturing processes, etc.

Two examples of work function, key activity and performance indicators are:

WORK FUNCTION – SAFE/PRODUCTIVE		WORK FUNCTION – COMMUNICATION	
<u>Key Activity</u> <u>Indicator</u>	<u>Performance Indicator</u>	<u>Key Activity</u>	<u>Performance</u>
needs/specs clearly Safety Inspection customer/business needs report issues	ID/report potential hazards	Material Specifications	Communicate
	Corrective action taken		Know
	Documentation and records		Evaluate, track &
communicated ID Unsafe Conditions information key people	Report health/safety threats	Quality Requirements	Knowledge of QA
	Consult others about response		Clear transfer of QA
	Take prompt/correct action		Timely/accurate to

The NOCTI test's has multiple choice questions are online, with one question per screen, with four choices; the "best" choice is to be marked and then "next" chosen. The online program "remembers" questions and displays each test-taker's progress on a summary, permitting return to any skipped (or already answered) question. In the job site simulation portion, each test-taker "enters" the factory, looks at shop rules and views workstation job instructions. After a short practice, the test taker begins the test, moving sequentially through workstations testing process, fabrication, subassembly and final assembly, being asked questions pertaining to safety, quality/continuous improvement, materials & specifications, and maintenance. Both static and "reactive" questions are used throughout this simulation component.

Demonstration Program - Wisconsin:

Through an earmark budget line, administered by the U. S. Department of Labor (DOL), the Milwaukee Area Technical College (MATC) has been designated as the program manager for the pilot assessments for 600 workers and students in Wisconsin. Testing is at three separate centers across Wisconsin - in Milwaukee (MATC), in the Southeast (Gateway Technical College) and the West (UW-Stout). Student and worker volunteers will participate through the end of 2004. No fee is charged in this phase.

Test-takers who successfully prove proficiency in the performance indicators, will receive an MSSC certificate. This serves as a nationally recognized, portable way for workers to show they are prepared to join existing manufacturing teams. Test-takers who fall short in any area will receive relevant, tailored training and be retested.

Primary benefits of standards and certification accrue to the following:

Employers – will be able identify, attract, recruit, hire, train and promote key employees.

Employees – will set long-term career paths, document competency and carry credentials.

Educators – will establish learning goals, define curricula/materials and track results.

Regulators – will develop an appropriate systems framework for workforce development.

Specifically, MSSC-certified workers may benefit in the following ways:

- Added responsibilities in the workplace.
- Commensurate salary increases.
- Selection for advanced education and training.
- Improved job opportunities, and flexibility.
- College credits toward degree programs.

Results:

The Wisconsin demonstration program offers an immediate answer to the often cited “brain drain” of Wisconsin workers finding better, good paying jobs elsewhere. It is part of the strategy to make effective use of existing human resources by assisting in matching employer needs. It means better productivity for our manufacturing sector, bringing with it economic growth and continued nationwide industrial leadership. The Wisconsin “model” will permit rapid replication on a regional and statewide basis, leading to nationwide adoption and acceptance.