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Tuesday, 01 June 2004 13:09

Training, then testing, reaps benefits for employees and companies.

Keeping up with the pace of continuously evolving technology is never easy, especially when it comes to automated manufacturing. Over the years, automation technology has grown increasingly sophisticated, helping to improve efficiency and maximize productivity.

On the flip side, however, such technological shifts also mean that engineers and technicians need to have the knowledge and skills necessary to design and maintain these sophisticated systems. The old adage “the best tools, when used by unskilled craftsmen, will still result in unsatisfactory results” continues to ring true, especially in the manufacturing environment.

More than ever, employees need to be equipped with the best tools and proper training to get the maximum benefit from an employer’s investment. In addition to the productivity benefits that come with a better-trained workforce, human resource executives know that employees trained to do their jobs become more engaged in their work.

Need skilled workforce

To successfully meet the demands of evolving technology, it is imperative that companies invest in the skilled people who design, program, maintain, and troubleshoot automation equipment. Ensuring a skilled workforce has become paramount to business success.

One of the wisest investments companies can make in their employees today is training. But, as many managers discover, simply attending training classes does not always ensure that the information presented is learned and, more importantly, applied. Many trainers and organizations have found that testing employees against a baseline can help determine areas where training is needed and can help to verify skills and knowledge.

Certification and its benefits

Certification provides companies a way to ensure skill levels at multiple sites, improving product quality through a highly skilled workforce. It also offers employees a way to benchmark skills and knowledge against industry standards and apply those skills to improve their work experience.

One organization that recognizes the growing need to find skilled workers is the Manufacturing Skill Standards Council (MSSC). Formed in 1998, MSSC (www.msscusa.org) is comprised of leading companies, international unions, educational and training organizations, and national, state, and regional government organizations focused on developing a national skill standards system for manufacturing. The MSSC system—skill standards, assessments, and certifications—is designed to give manufacturers a yardstick to measure, improve, and profit from a workforce trained in cutting-edge manufacturing skills.

All credible certification programs also require recertification. To ensure that certified professionals are knowledgeable on current technologies, some organizations simply verify that a professional is still active or experienced in the industry. Others require continuing education, rewarding of continuing education units (CEUs), and retesting at the end of a certain period.

Employees reap many benefits from these programs (see accompanying section " Employee Benefits from Credentialing ").

Certification as a change agent

Certification—whether on a product, technology, or process—can help organizations quickly implement new programs or changes. With manufacturing, testing, and assembly sites around the world, Intel Corp., Santa Clara, CA, is a leader in semiconductor manufacturing and technology.

Since 1998, Intel's maintenance department has gradually embraced predictive maintenance as a key component of its machine uptime strategy. Using integrated condition monitoring tools from Rockwell Automation, Milwaukee, WI, Intel has designed and implemented a program that allows the company to effectively monitor, analyze, and track equipment performance—observing operating conditions locally as well as remotely—across multiple production sites.

As the program is rolled out across the organization, Mick Flanigan program champion, predictive maintenance program manager and project leader at Intel's Northwest Regional Operations facility, uses training to build program consistency at each of the sites. Using a customized vibration training course he developed, technicians at each site are introduced to the basics of vibration monitoring, data collection, and the Entek Enshare software.

As individuals begin taking more active roles in the analysis and reporting of data, Intel enrolls them in advanced vibration analysis training. At the close of each training session, the Intel employees take a written certification exam that covers the material presented during the 3-day training session.

“For Intel, vibration analysis training and certification has become a valuable tool,” Flanigan said. “In addition to helping build and maintain a knowledgeable maintenance team, it also helps the maintenance department build management’s confidence in the program.”

Through its vibration analysis training and certification program, Intel has been able to develop and implement a consistent predictive maintenance program at 14 of its 19 global production sites, including facilities in the U.S. and in China, Costa Rica, Ireland, Malaysia, and the Philippines.

Certification means credentialing

Certification signifies that professionals have learned and mastered a specific product or technology. These professional credentialing programs establish competency standards for a given job.

Similar to the CPA exam in the accounting industry, which sets professional standards and performance requirements, credentialing in the manufacturing environment results in more qualified engineers, technicians, and operators on the plant floor. Organizations such as the Society for Maintenance & Reliability Professionals Certifying Organization (SMRPCO) aim at raising the visibility and professionalism of the maintenance function as a whole (www.smrpco.org).

Organizations credential individuals in a variety of ways, but almost all of them require some level of testing, including written and practical exams. Some organizations also require a documented minimum amount of experience in the industry or minimum educational requirements.

A more engaged workforce

Credentialing provides an objective, outside look at what professionals should know when applying a given technology. Professionals who participate in a credentialing program have a clearer understanding of their skills and abilities compared to industry requirements, which can help them better focus development efforts to create and maintain the most comprehensive skill set for their industry.

Credentialing programs also can encourage ongoing learning. Continued education introduces employees to new technologies and practices that they can apply to their own facility or operation.

Many companies today already offer incentives for their employees to participate in credentialing programs. With programs available from all major producers of automation controls equipment, finding the credentialing program that best fits with a particular operation or company is simply a matter of selecting the program most appropriate for the manufacturer's installed equipment base. Some companies today also encourage their employees to be certified in multiple technologies.

Heightened respect and awareness

For manufacturers, credentialing can provide an impartial measurement of the company's capabilities. The number of credentialed employees, for example, can send a message to shareholders and customers alike that a company's employees are more qualified to do their jobs and are better prepared to respond to changes in the industry or marketplace.

Not too far in the future, information such as the number of certified employees will likely be used as a competitive measure between companies. Two systems designers bidding on the same project, for example, might find that the key differentiator between winning and losing a bid lies in the qualified staff who will ultimately work on the project.

Winner takes all

The bottom line is simple: certification improves productivity and efficiency for manufacturers and system designers. By adopting new standards and offering appropriate training programs, automation equipment manufacturers and industry trade associations can set the industry benchmark for required levels of skills and knowledge.

Increasingly, certification and credentialing are being viewed as a mark of distinction for employees who demonstrate their commitment to their profession. These programs offer significant professional and competitive advantage to companies and employees, allowing them to demonstrate that their skills and knowledge are the best. **MT**

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Employee Benefits from Credentialing

Employees reap many benefits from credentialing programs, including:
- Clearer direction for career development and education
- Recognition within their current organization
- Better pay
- Greater transportability of skills between plants and companies
- Advantages in job promotion
- Greater job effectiveness
- Improved ability to differentiate between candidates in the hiring and promotion process
- Improved training effectiveness

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