

Credentialing in Electrical Systems Testing Raises the Bar for Training, Reliability

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Most industrial plants have extensive electrical systems consisting of equipment that continually needs to be monitored, tested, and maintained to ensure safety and reliability. However, what type of tests should be performed, and what do their values represent? These questions hold true not only for new installations but for service-aged equipment as well.

This is where certified employees become so valuable within an industrial organization, says Ralph Patterson, president and owner of Power Products & Solutions Inc., of Charlotte, North Carolina. "A certified technician, properly trained and experienced, has the unique ability to perform electrical testing as well as to understand how to read test results and determine their impact on performance," he explains.

Patterson, whose engineering experience spans the field of high-voltage electrical equipment testing, has served as a design engineer for both Standard Transformer and Duke Power Company, head of transformer design with Ohio Transformer, and as field engineer for Update, Inc. Prior to establishing Power Products & Solutions, he was a principal and executive vice president of SETA-AC Testing.

"Experience is said to be invaluable," he points out, "but learning the hard way that removing a relay may shut down an entire facility is not practical. As technicians strive to improve their reliability and that of their employers, training and certification become the credentials that technicians aim for."

The National Institute for Certification in Engineering Technologies (NICET) offers programs for industry members to acquire credentials in the areas of instrumentation, electrical/electronics, electrical power (distribution, production, substation, and transmission), electrical testing, and industrial engineering technology. This year, NICET added a new program — video security systems — as part of its certification package in low-voltage electronic communications systems.

NICET offers four levels of certification in the career path of an electrical testing technician. A cooperating partner with the institute in this program is the InterNational Electrical Testing Association (NETA), an accredited standards developer for the American National Standards Institute. NETA defines the parameters by which electrical equipment is deemed safe and reliable. Part of its mission in serving the industry is to establish standards, publish specifications, accredit independent testing companies, and certify test technicians.

"With an increasing number of certified technicians required by NETA member companies and the industry itself, certification has certainly come of age," says Patterson, an active affiliate of NETA who's leading the effort to redesign NICET's electrical testing certification program. Currently, he and other members of the NETA Standards Review Council are working with NICET in developing a comparable program that includes a technician profile and knowledge-skill-ability requirements for each certification level.

“Some of the difficulty in becoming a certified technician is the background and or experience required to fully understand electrical distribution systems,” Patterson notes. “The NICET program is unique in that it allows the emerging technician to develop skills at an increased pace when presented with the opportunity to evaluate and perform electrical testing.”

Patterson emphasizes that NETA has developed, and continues to revise, industry-recognized acceptance and maintenance specifications for electrical power distribution equipment and systems. “The certified technician needs a complete understanding of these procedures as well as a background for interpretation of the results,” he contends. “The NICET program is one of several offerings that provide this coveted insight. It’s my mindset that although technician certification should be a requirement, it is just as much essential for the well-being of the public and the industry as a whole.”

NICET General Manager Mike Clark admits, “Even though we’ve made substantial progress with our engineering technology programs in industrial instrumentation, electrical/electronics, electrical power, and electrical testing, we still need to make greater inroads into the industrial community, particularly the power sector.”

Many of the larger energy companies, such as American Electric Power (AEP) and the Duke Energy Corporation, do not require additional credentialing or certification of their engineering technician and technologist staffs beyond the basic entry-level requirement of a two-year associate degree approved by the Accreditation Board for Engineering and Technology.

“Just as the National Society of Professional Engineers (NSPE) has faced challenges over the years with the industry exemption in encouraging qualified engineers to become licensed, so, too, have we faced difficulties at times in convincing engineering technicians in industry to become certified,” Clark adds. He notes, however, that alternative approaches do exist.

For instance, Duke Energy officials point out that although the company doesn’t require technician certification, “if an employee wants to pursue certification, we will support the effort and provide dollars through our tuition refund programs to assist financially.” An AEP policy “recognizes the competitive advantage inherent in the knowledge and skills of its workforce. To meet the demands of a highly competitive, technology-driven global economy, the company provides financial assistance to eligible employees furthering their education and pursuing personal development.”

“We need to take advantage of these opportunities,” Clark concludes. “Companies that provide resources promoting career development are, in essence, opening the door for our programs. However, they’re not going to come to us. We must go to them and do a better sales job. This is where NSPE can help, by having its members address the career paths of technical staff within their own companies to see if NICET can enhance their potential for advancement.” 