How to Establish a Documented and Compliant Program for Training and Qualifying Electrical Workers

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Executive Summary

OSHA is getting tougher about conducting inspections and issuing safety violation citations while simultaneously mandating stricter requirements for electrical training. However, the challenge of properly designing, executing and documenting a complete electrical training and qualification program seems very costly, overwhelming and time-consuming. As a result, companies often delay updating their safety policies and training programs to comply with the latest requirements, putting themselves at risk of compliance violations.

The risks can be astronomical. The direct and indirect expenses associated with a major electrical injury or death can easily cost an employer upwards of $20 million in damages. By investing in proper training and worker qualification programs, companies can mitigate these risks and costs. **Skill Circuit™ Electrical Qualification Training** is a simple five-step program that gives enterprises a thorough and documented process for training and producing qualified workers that exceeds OSHA requirements. This is an innovative development in the electrical safety training and consulting arena.

What is a "qualified" worker?

OSHA 1910.399 defines a "qualified person" as: *"one who has received training in and has demonstrated skills and knowledge in the construction and operation of electrical equipment and installations and the hazards involved."*

Many companies ask "What does this really mean – and are *all* of our electrical workers required to be qualified?" According to OSHA CFR 1910 subpart S and NFPA 70E standards, employees who are doing electrical work must be qualified for the electrical tasks that they are responsible for performing. Electrical work is conducted under a variety of job titles, so the level of training required for qualification can vary greatly depending on the electrical tasks required for each job.

For example, maintenance technicians or operators are required to be trained and qualified only for limited electrical tasks that are a part of their job. However, job roles such as electrician, wireman, instrument mechanic and other similar positions require much more extensive training in electrical applications to become qualified because their exposure to electrical components and hazards is much broader than the exposure of a maintenance technician.

Regardless of skill level, training should always include basic electrical safety awareness so that workers understand the risks of shock, fire, arc flashes and circuitry hazards. Qualified workers must know the proper use of Personal Protective Equipment (PPE) and must be able to identify and mitigate electrical hazards that are relevant to their specific job role.

The challenges around electrical training and worker qualification

The challenge created by OSHA mandates – and supporting NFPA compliance recommendations – is that the task of properly designing, executing and documenting a complete electrical training and qualification program seems too costly, overwhelming and time-consuming – and thus, it is often left undone, which exposes companies to significant risks.

Any deficiencies in electrical safety training, worker qualification or workplace safety policies not only jeopardize worker safety, but also put companies at risk of serious citations, fines, litigation expenses and indirect costs that arise from workplace injuries and deaths caused by electrical hazards.
OSHA fines can be hundreds of thousands of dollars – but that is only the beginning. There are direct costs (fines, legal fees, etc.) and indirect costs (production downtime, damaged reputation, loss of business, etc.). H. Landis Floyd II presented a paper at the 13th Annual IEEE-IAS Workshop that estimated the direct and indirect costs resulting from a major electrical injury to be $23 million. And a 2004 University of Chicago report estimates $15.75 million per case in direct and indirect costs.

These are examples of OSHA statements commonly made in citations that are issued due to an insufficient electrical safety program:

- *"…agency officials allege that inadequate safety measures were in place to protect against electrical hazards…"*
- *"…employee was not provided insulated tools or proper personal protection equipment…"*
- *"…employee not qualified to perform the electrical work…"*
- *"…electrical safe work practices and procedures not provided; proper training not provided…"*

Training: Requirements getting stricter
OSHA is becoming increasingly stringent about the training and documentation required in order for companies to designate qualified electrical workers. For example, OSHA 1910.332(c) currently mandates "*classroom or on-the-job type"* training (which means in-person hands-on training) for qualified electrical workers and requires that "the degree of training provided shall be determined by the risk to the employee."

Given the risks of even low-voltage electricity, comprehensive hands-on training is a must, even for experienced workers if they haven't yet received this type of training. Under OSHA's definition, senior electrical and maintenance workers are not considered qualified unless the company has documentation of training that meets the OSHA hands-on training criteria.

In addition to OSHA training mandates, NFPA 70E Standard for Electrical Safety in the Workplace 2012 also sets the bar higher by recommending that companies provide regularly scheduled training – and document it. For example, NFPA 70E 110.2(D)(3) advises employers to conduct electrical safety retraining at intervals not to exceed three years. Companies must now consider the logistics of implementing a more robust, routine and documented electrical safety training program.

Qualifying workers: How to do it?
Employers must demonstrate that any worker performing an electrical task is "qualified" for that particular task. It's up to the employer to figure out the best way to do this, and the task of "qualifying" electrical workers seems vague and nebulous: After hands-on training has been provided, what is the best way to demonstrate that workers can safely perform the electrical tasks that they are assigned? What process needs to be established in order for companies to deem them as "qualified" with defensible evidence of compliance?

Electrical safety program: Is it up-to-date?
Many companies are operating on outdated or non-existent electrical safety policies and these need to be brought up-to-date with current OSHA mandates and NFPA standards before new training procedures are implemented. Plus, the 2012 update to NFPA 70E 110.7(H) now recommends that organizations audit their electrical safety programs at least every three years, which creates the additional burden of establishing a regularly scheduled audit process to ensure compliance.

The daunting notion of implementing a systematic and documented company-wide electrical safety training program across multiple facilities has many organizations clamoring for assistance in designing and executing safety policies, training courses and qualification processes that are tailored for an enterprise's facilities, remote locations and unique production environments.

It's clear that the full costs of a workplace injury or fatality can be astronomical. Organizations often view the cost of electrical safety training as a necessary evil, but they need to understand that an investment in training can literally save them millions of dollars by mitigating the risks of electrical hazards. The benefits of investing in creating a robust electrical safety internal policy, and providing adequate training, far outweigh the risks. Electrical safety might seem too big to tackle, but organizations can't afford NOT to do it. And with the right partner, it's easier than it seems.

A solution for training and producing qualified workers

First, it's helpful to clarify that neither OSHA nor NFPA helps employers qualify workers – or certify that they are qualified. Employers are responsible for implementing electrical training and qualification programs that meet or exceed OSHA's requirements.

Many companies have found a solution by partnering with NTT Workforce Development Institute. We've already created a program for training and worker qualification that can be modified to match the requirements of any organization's work schedules, facilities and production environments.

Skill Circuit™ Electrical Qualification Training is a simple five-step program that delivers a powerful blend of instructor-led classes and hands-on labs that enable workers to develop their skills using real equipment. The classroom training is reinforced with online assessments, courses and tutoring tools. Additionally, this program brings the training on-site to any location which is beneficial because it minimizes worker time-off-the-floor and eliminates travel expenses.

But this program far exceeds training alone – it helps companies implement a documented and compliant process for producing qualified electrical workers that exceeds OSHA requirements and NFPA 70E standards. This is an innovative development in the electrical safety training and consulting arena.

Skill Circuit™ Electrical Qualification Training Five-Step Program

1. Workers register in **Skill Circuit™ Online**, NTT's web-based Learning Management System (LMS) that enables employers to track and document employee training activities and qualification status. This valuable reporting tool provides evidence of compliance. Additionally, e-learning activities ensure that employees retain more of the knowledge they learn in their NTT instructor-led courses.

2. Workers take an **Electrical Safety Awareness Lecture (either in the class room or online)** that focuses on NFPA 70E 2012 standards, OSHA safe work practices and more. There are a variety of electrical safety awareness courses so workers can select the one that best matches their job.

3. Workers who perform electrical work take one or more **Electrical Hands-On Skills Courses** that best match their job responsibilities. They may choose from several courses (low to high-voltage) resulting in a training program customized for either experienced workers or those that just need the fundamentals for limited electrical tasks.

4. A select few employees take the **Evaluator Course**, an innovative new "train-the-trainer" class that teaches an organization's designated personnel how to evaluate and qualify future workers that go through the organization's electrical safety training program. This course is the first step toward establishing a documented process for qualifying electrical workers.

5. Finally, the new hands-on **Electrical Demonstration for Qualification Course** shows your company's designated evaluators how to conduct a documented evaluation of workers' skills. Workers don appropriate personal protective equipment (PPE) and perform key electrical tasks required for their particular job. NTT trains companies how to conduct these events, mentors evaluators in assessing workers' skills, and provides the appropriate documentation of all activities to create defensible evidence for compliance.

Organizations that utilize **Skill Circuit™ Electrical Qualification Training** benefit from the standardized reliability and compliance that they now experience across their facilities. They can turn their attention to core business issues and stop worrying, secure in the knowledge that they are exceeding OSHA's requirements for electrical safety training and qualified worker requirements.

Most organizations that implement this program benefit from these results:

- A reduction in workplace accidents, violations and fines.
- Increased business productivity due to properly trained workers that operate safely and know how to protect expensive equipment from damage.
- Training that exceeds OSHA mandates and NFPA 70E standards by providing a documented and compliant process for electrical training and worker qualification.
- A better training system that is standardized across multiple locations and yet is also customized for the company's facilities, equipment and operating environment.
- Improved worker morale and retention because workers appreciate the company's investment in their skills – and in their safety.

In order to effectively reduce corporate liability and create a culture of safety, organizations must take ownership of creating an electrical safety program that exceeds compliance standards. It's a large task, and its one that NTT's **Skill Circuit™ Electrical Qualification Training** can help you fulfill.

*Questions? Call 1.855.428.4457 and ask to speak to an expert about **Skill Circuit™ Electrical Qualification Training.***