

Avoiding Workplace Electrical Accidents

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In this increasingly connected world, electricity is vital to the successful operation of every building, whether residential, industrial, or commercial. It's what helps run our businesses and our society as a whole. The importance of electricity cannot be underestimated, and its danger cannot be taken for granted. Anyone working on or near electricity should have the proper training to avoid potential risks and hazards.

According to the Bureau of Labor Statistics, contact with electricity is a leading cause of workplace injuries and fatalities. There were 166 electrical fatalities in 2019, which was a 3.75% increase over 2018 and the highest number of electrical fatalities since 2011. Nonfatal electrical injuries involving days away from work totaled 1,900 in 2019, a 22% increase over 2018. These injuries and deaths can be prevented by ensuring qualified electrical workers perform any electrical work. This ensures the work is done right and completed safely.

Trained electrical workers know and understand the requirements of the National Electrical Code (NEC) and are experienced in compliance with NFPA 70E: Standard for Electrical Safety in the Workplace. The NEC codifies the minimum requirements for safe electrical installations in a single, standardized source. While the NEC is not itself a U.S. law, the NEC is commonly mandated by state or local law. Revision of the code occurs every three years to ensure that the code considers the latest in technology and safety. NFPA 70E addresses electrical safety requirements for employee workplaces that are necessary for the practical safeguarding of employees during activities such as the installation, operation, maintenance, and demolition of electric conductors, electric equipment, signaling and communications conductors and equipment, and raceways. A revised and updated NFPA 70E edition is released every three years. The current version was released in 2020.

Qualified electricians follow strict safety principles that include daily inspections and evaluating electrical equipment, planning out every job and conducting job hazard analysis, identifying electrical hazards, and reducing associated risks. A typical safety program that qualified electrical workers go through includes the importance of personal

protective equipment, safe work practices, special precautionary techniques, and risk assessment.

Non-electrical workers should also be trained on the importance of workplace electrical safety, especially when working on or near electricity. Some jobs require specific knowledge and experience, so it's imperative to stop and reassess a situation if there is ever a doubt about a job's task or a procedure's requirement. Knowing when to say when can save your life and the lives of those working with you. Prior to commencing a task, always ask yourself:

1. Have I been properly trained to safely complete this job task?
2. Have I worked on this task before, and do I have the right training and experience?
3. Do I have the proper tools for this job?
4. Is the hierarchy of risk controls being followed to ensure that preventative and protective risk controls are being implemented?
5. Has a proper risk assessment been performed?
6. Are all conductors and circuit parts in an electrically safe working condition?
7. Are these parts properly guarded to reduce the likelihood of electrical contact or arcing faults?
8. Are all applicable procedures and job planning procedures completed?
9. Am I confident about completing this job without risk or putting others at risk?

Another lifesaving lesson for non-electrical workers is to learn to avoid accidental contact with overhead power lines. Overhead power lines cause 40% of all electrically related fatalities in the workplace, and a majority of these accidents occur with workers that have little to no electrical safety training. That's why it's imperative to always look up before conducting any work outdoors. Completing this simple action could save your life.

If you see equipment in contact with a power line, you need to stay away at least 35 feet back, which is about two dump truck lengths, and warn others to do the same. If the conditions are wet, you may need to move even further. If you're in a vehicle, stay inside, warn others to stay away, and call 911. Do not exit unless you see smoke or fire. If you must exit, do not touch the ground and the vehicle at the same time. You must jump and land with your feet together. Then avoid lifting your feet as you slowly shuffle away from the vehicle and downed power line. Remember, if you see a downed power

line, stay away and call 911. Be sure to always look up in all ways to avoid major accidents in the first place.

A comprehensive electrical safety program is the key to preventing electrical injuries and fatalities in your workplace to ensure all employees go home safely after a shift. By teaching electrical and non-electrical workers the importance of conducting work safely around electricity and how to avoid electrical hazards, the number of workplace electrical injuries and fatalities will decrease. Thankfully, most on-the-job electrocutions and electrical injuries can be prevented by following a few basic steps, including those listed above.

The Electrical Safety Foundation International (ESFI), the leading authority on workplace electrical safety, understands each work environment presents different electrical hazards. ESFI's workplace safety materials provide valuable information to help employees make safe choices every day and tips for creating a safer workplace, whether work takes place in an office, on a job site, or in a manufacturing setting. For more information and for free-to-share materials you can spread throughout your workplace and community, visit esfi.org.

About the Author

Brianne Deerwester is the Communications Coordinator for the Electrical Safety Foundation International. She handles all traditional and social media, promoting electrical safety at home and in the workplace.