

# Electrical Safety at Work

INFORMATION AND RESOURCES ON WORKING WITH ELECTRICITY

According to the Electrical Safety Foundation International (ESFI) and the US Bureau of Labor Statistics (BLS), in 2020, there were 126 workplace fatalities caused by electricity, most of which (44%) occurred to construction workers. For this reason, electricity is included in OSHA's focus four hazards for construction, the four workplace hazards that cause the most fatalities. In addition to injuries and fatalities, electricity is also the most common cause of structure fires.

Two sets of regulations govern the requirements for working on or around electrical systems and for their proper and safe installation. Subpart S of the OSHA/PESH general industry regulations and Subpart K of the OSHA/PESH construction industry standards to protect workers and the New York State Electrical Code for proper electrical installation. Incorporated into the NYS EC by reference is the National Electrical Code (NEC), which is National Fire Protection Association (NFPA) Standard 70.

Under the OSHA/PESH regulations, employers have two primary responsibilities, to properly install and operate electrical systems and to assure that employees who work on the equipment are "qualified" to work on them safely. Electrically qualified employees have received training or have experience in the safe practices for working on live electrical systems. Unqualified employees may only work on electrical systems if they have been properly de-energized and secured to prevent unintended energization using energy control procedures as part of a Lockout/Tagout program.



In CSEA's experience, the most commonly violated portions of the OSHA/PESH electrical regulations are the: proper designation and training of electrically qualified employees, establishment of Lockout/Tagout energy control procedures, improper use of flexible electrical (lead or extension) cords, working too close to overhead electrical transmission wires, storage of combustible materials in electrical control rooms, openings in electrical junction or breaker boxes, electrical control devices (breakers, switch gear and equipment control switches) not labeled to indicate the equipment they control, blocked working space in front of electrical control devices, and providing proper ground fault circuit interrupter (GFCI) protection when using portable electrical tools outdoors or in wet areas.



# PREVENTION

- If you have not received electrical training, do not work on any electrical equipment that you have not been trained to de-energized using proper energy control procedures as part of a Lockout/Tagout program. If not electrically trained have all home electrical work done by a licensed electrician.
- Report to your supervisor any unlabeled electrical switch gear, breakers, or equipment control switches (not light switches). At home check your breaker box to be sure they are all clearly labeled as to what they control.
- Do not use electrical extension or lead cords if they are attached to a building surface, run through a window or door, placed where they can be damaged by foot or vehicle traffic. Disconnect them immediately after use. Make sure they are properly sized for the equipment and are as short as possible. Replace them immediately if they get warm during use or have been damaged.
- Unqualified employees, their conductive tools, and vehicles they are in must stay at least 10 feet away from all electrical transmission lines. Greater distances are required as the voltage increases and should be communicated before work near them begins. At home be stay the same distance from the electrical feed to the house, especially with metal ladders and roof snow rakes.
- Keep the space in front of electrical breaker boxes and equipment control switches clear for at least 3 feet and report any combustible materials stored in these spaces or in electrical enclosures. At home keep the area in front of your breaker box clear for at least 3 feet.
- Report any missing punch outs or covers on electrical junction or breaker boxes. At home check for missing punch outs on your breaker and junction boxes and fill with approved inserts to fill them.
- Make sure electrically powered devices and tools used in a wet area or outside must be protected by a GFCI in the circuit, the outlet or the extension cord and test the GFCIs using the button provided before each use. If available use cordless tools instead of corded.

**For more information and resources visit:**

**[www.cseany.org/safety](http://www.cseany.org/safety)**



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