



## Rhode Island Local Technical Assistance Program

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### Everyday Safety Talks

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# Workplace Electrical Practices

*This Everyday Safety Talks was originally published by Cornell Local Roads.*

Electrocutions occurring between 1982 and 1994 were studied by the National Institute of Occupational Safety & Health (NIOSH) in 1998. The NIOSH researchers, Kisner & Casini, analyzed 224 electrocutions which resulted in 244 workplace fatalities. These fatalities accounted for approximately 7% of all workplace deaths. The information they learned provides valuable lessons for everyone that works with or around electricity.

- **Younger males die most often.** Victims ranged in age from 17- 70 years, 99% of them were men, 64% died prior to age 35, and 99% of the incidents involved alternating current (AC)
- **New hires need to take the most care.** 41% of all victims were on the job for under 1 year
- **Construction workers** had the highest percentage of electrocutions at 40%. Other predominate industries included: transportation/communication/public utilities (16%); manufacturing (12%); and agriculture/forestry/fishing (11%)

**Utility line workers** (linemen) typically receive extensive training in electrical safety, yet they had the highest number of fatal injuries. 55% of linemen fatalities were caused by failure to use required Personal Protective Equipment (PPE) such as gloves, sleeves, mats, or blankets. **Laborers**, who generally receive little or no electrical training had the next highest fatality rate. NIOSH identified **five** case scenarios describing the 244 fatalities: **1)** Direct worker contact with an energized powerline (28%); **2)** Direct worker contact with energized equipment (21%); **3)** Boomed vehicle contact with an energized powerline (18%); **4)** Improperly installed or damaged equipment (17%); and **5)** Conductive equipment contact with an energized powerline (16%).

- Are employees given and required to use the proper protective equipment and tools when working around electrical hazards?
- Is there an effective lockout/tagout procedure for work on electrical circuits and equipment?
- Have employees been advised of the location of hazards and proper protective measures to avoid contact with an energized circuit?
- Are safe work practices (de-energizing live parts, discharging capacitors, lockout, etc.) used to prevent electrical shock and other injuries?
- Are portable electrical tools and equipment grounded or double insulated?
- Do electrical boxes and fittings have approved covers?
- Are defective, damaged, or frayed electrical cords replaced promptly?
- Are ground fault circuit interrupters and/or an assured equipment grounding program used on construction sites? Inspect cords and grounds on cords
- Are electrical installations in hazardous locations approved for those locations?
- Is your electrical system regularly checked by someone trained in the National Electric Code?
- Dielectrically rated boom trucks should be used for electrical work; Do not run wires across the dielectric boom

*Everyday Safety Talks are published by the Rhode Island LTAP Program in cooperation with the National Local Technical Assistance Association and participating partner organizations.*