

# first responder beware<sup>®</sup>

**Staying Safe While Saving Others:  
Electrical Safety for First Responders**



**PPL Electric Utilities**

- **Firefighters, police, and EMTs are typically first on the scene in an emergency and face the greatest risk from electrical infrastructure contacts.**



- **Understanding the potential dangers and dealing with them correctly makes everyone safer.**
- **This program is designed to supplement, not replace, your department's standard operating procedures (SOPs) on electrical safety.**

# Electrical Safety Basics

- **Respect the Power of Electricity**
- **Hands Off Electrical Systems**
- **Protect Yourself and Others from Shock**
- **Always Observe the **20-Foot** Rule**
- **Be Aware of Overhead Power Lines**
- **Use Extra Caution Near Downed Power Lines**
- **Manage Substation and Transformer Fires**

# Respect the Power of Electricity

- **Electricity always seeks the easiest, most direct path to ground** through conductors like:
  - Your body
  - Trees
  - Water
  - Metal objects and structures
  - Long or tall equipment
- **Even low-voltage electric shock can be fatal.**
- **Standard-issue protective gear DOES NOT insulate you against electric shock.**
- **Electric shock and burn injuries may include internal tissue damage that is not immediately apparent.** Make sure victims receive thorough medical evaluation.



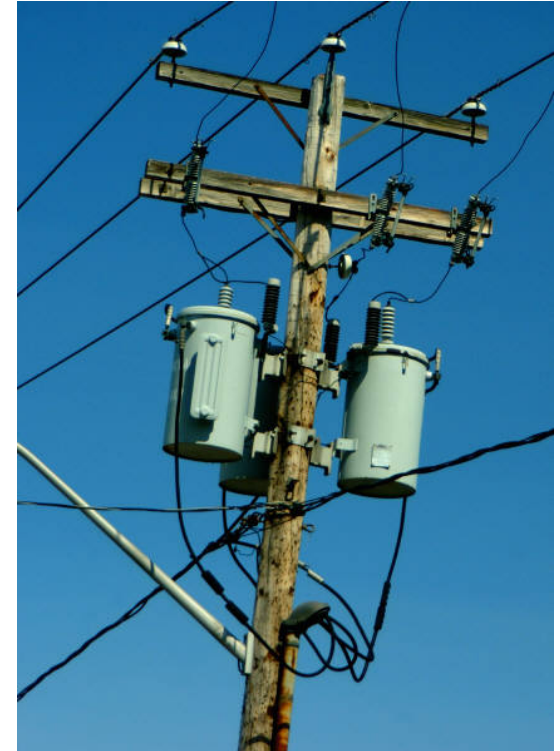
# Hands Off Electrical Systems

- **Never attempt to disconnect electrical services:**
  - **Never cut service wires.**
  - **Never attempt to remove electrical meters.** This is extremely dangerous and can cause serious injury or death. Call PPL Electric Utilities to de-energize the electric service.
  - **Never attempt to open or enter a manhole, underground vault, or substation.**
- **Never touch or attempt to move power lines.**



# Protect Yourself and Others from Shock

- **Always identify power lines and electrical equipment upon arrival at an incident scene.**
- **Assume all lines are energized** as well as all objects in contact with power lines.
- **If power lines or electrical equipment are involved in an incident,** have your dispatcher contact PPL Electric Utilities.
- **Provide the best possible directions** to the location.
- **Secure the area.**



# Always Observe the 20-Foot Rule

- Keep yourself and your equipment **AT LEAST 20 feet away** from overhead power lines.
- Higher voltages require greater clearances.
- There is no uniform system for identifying power line voltage. When in doubt, contact PPL Electric Utilities for clearance information.
- **Electrical safety distances given are minimums. Always use the maximum possible distance.**

# Be Aware of Overhead Power Lines

- Park emergency vehicles as far away as possible from overhead power lines.
- Keep aerial equipment ***AT LEAST 20 feet*** away from overhead lines.
- Never use a solid water stream to fight fires near overhead power lines.





# Be Aware of Overhead Power Lines

- **If your equipment contacts a power line:**
  - **The equipment should be considered energized.**
  - **Call PPL Electric Utilities.**
  - **If you can do so safely, move the equipment away from the line.**
  - **If the equipment cannot be moved, stay put, and warn others to stay away until PPL Electric Utilities personnel give the all-clear.**

# Be Aware of Overhead Power Lines

- **If fire or other imminent danger forces you off the equipment:**
  - **Jump clear**, keeping both feet together and without touching the equipment and the ground at the same time.
  - **Shuffle away with small movements**, keeping your feet close together and on the ground at all times.
  - **Do not run or take large steps.**  
When equipment contacts a line, electricity spreads out in the ground like ripples in a pond and the voltage decreases with distance from the point of contact. If your legs bridge two areas of different voltage, you could be killed.



# Use Extra Caution Near Downed Power Lines



- Park emergency vehicles away from fallen lines.
- Secure the area:
  - Keep yourself and the public **AT LEAST 100 feet away** from ALL downed power lines and objects that may be energized.
- Never touch or attempt to move fallen lines or objects contacting them.
- Never use a solid water stream to fight fires near downed lines.

# Use Extra Caution Near Downed Power Lines

- **DO NOT** approach, enter, or touch areas or vehicles that may be energized.
  - Call PPL Electric Utilities.
  - Instruct vehicle occupants to drive the vehicle away from the line if this can be done safely.
  - If the vehicle cannot be moved, **instruct the occupants to stay put until PPL Electric Utilities personnel give the all-clear.** Staying in the vehicle is their **BEST** protection against electric shock.

# Use Extra Caution Near Downed Power Lines

- If occupants in an energized vehicle are in imminent danger from fire or other hazards:
  - Instruct them to jump clear **without contacting the vehicle and the ground at the same time.**
  - Tell them to shuffle away with small movements, keeping both feet close together and on the ground at all times.
  - Demonstrate the proper procedure from a distance.
- If vehicle occupants are injured, disabled, or otherwise unable to safely exit the vehicle on their own, your incident commander will assess the situation and tell you how to proceed.

# Substation Fires

- **Burning electrical equipment is already ruined and will be replaced. The safest course of action is to LET IT BURN.**
- Contact PPL Electric Utilities and wait for their personnel to arrive. **Never attempt to enter a substation without utility personnel present.**
- **Evacuate the area** and keep everyone **AT LEAST 500 feet away** from the substation.
- Electrical equipment may contain oil. **Be alert for explosions and toxic smoke.**
- **Protect exposures**, such as trees and buildings, to prevent fire from spreading.
- **Prevent contamination of water resources.** Monitor for oil runoff and direct it away from catch basins, surface waters and wetlands.
- **Never attempt to open, or disturb, or operate** any PPL Electric Utilities equipment or facility.



# Transformer Fires

- **Do not open or enter switch cabinets or pad-mounted transformers.**
  - **Never cut locks or pry cabinets open.** Equipment contains live electrical components, and if you contact them, you could be killed.
- **Call PPL Electric Utilities, evacuate the public, and protect area exposures.**
- **Let transformers burn until otherwise instructed by PPL Electric Utilities personnel.**



# Electrical Safety Review

- **Identify all overhead power lines and electrical equipment upon arrival at an incident scene.**
- Whenever you suspect electrical infrastructure is involved, or when in doubt, **call PPL Electric Utilities.**
- **Hands off electrical systems.**
  - Never attempt to disconnect electrical service.
  - Never touch power lines.
- **Assume all power lines are energized and keep yourself and your equipment *AT LEAST 20 feet away.***
- **Even low-voltage electric shock can be fatal**, and your gear does not insulate you against electric shock.
- **When responding to a substation or transformer fire, let it burn**, evacuate the area, protect exposures, and direct any oil runoff away from water resources.



# Contact Information

- In case of emergency, call PPL Electric Utilities at **1-800-342-5775 (1-800-DIAL-PPL)**
- For additional information, visit the website at **[ppl.e-smartresponders.com](http://ppl.e-smartresponders.com)**



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**Thank You**