first responder beware®

Staying safe while protecting others: Electrical safety for first responders

CPS ENERGY®

#52810 © 2021 Culver Media, LLC 800-428-5837

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).

#52810 © 2021 Culver Media, LLC 800-428-5837

Electrical Safety Basics

Topics We Will Cover

- Respect the Power of Electricity
- Keep 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

#52810 © 2021 Culver Media, LLC 800-428-5837

Respect the Power of Electricity

- **Electricity always seeks the easiest, most direct path to the 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 attention.

#52810 © 2021 Culver Media, LLC 800-428-5837

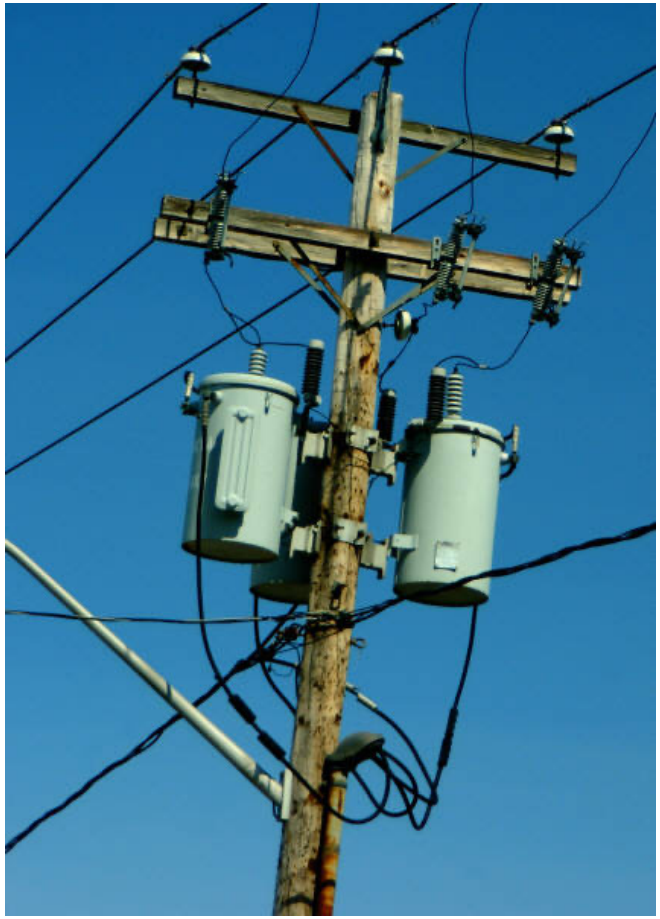
Keep Hands Off Electrical Systems

- **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.
- **Never attempt to open or enter a manhole or vault** until you are sure it has been de-energized.
- **Never touch or attempt to move power lines.**

#52810 © 2021 Culver Media, LLC 800-428-5837

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 CPS Energy.
- **Provide the best possible directions** to the location.
- **Secure the area.**



#52810 © 2021 Culver Media, LLC 800-428-5837

Always Observe the 20-Foot Rule

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

#52810 © 2021 Culver Media, LLC 800-428-5837

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.
- Use a spotter. An equipment operator working alone cannot safely judge the distance from the equipment to overhead power lines.
- Never use a solid water stream to fight fires near overhead power lines.

#52810 © 2021 Culver Media, LLC 800-428-5837

Be Aware of Overhead Power Lines

- **If your equipment contacts a power line:**
  - **The equipment should be considered energized.**
  - **Call 911 and CPS Energy.**
  - 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 utility personnel give the all clear.

#52810 © 2021 Culver Media, LLC 800-428-5837

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 steps**, 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.

#52810 © 2021 Culver Media, LLC 800-428-5837

Use Extra Caution Near Downed Power Lines

- Park emergency vehicles away from fallen lines.
- Secure the area:
  - Keep yourself and the public AT LEAST 30 feet away from fallen power lines.
  - Downed transmission lines from large towers require a distance of at least 100 feet.
- Never touch or attempt to move fallen lines or objects contacting them.
- Never use a solid water stream to fight fires near downed lines.

#52810 © 2021 Culver Media, LLC 800-428-5837

Use Extra Caution Near Downed Power Lines

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

#52810 © 2021 Culver Media, LLC 800-428-5837

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 land with their feet together and shuffle away with small steps, keeping their feet close together and on the ground at all times.**
  - **Demonstrate the proper procedure from a distance.**
- **If 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.

#52810 © 2021 Culver Media, LLC 800-428-5837

Substation Fires

- **Burning electrical equipment is already ruined and will be replaced. The safest course of action is to LET IT BURN.**
- Contact CPS Energy 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* 300 feet away** from the substation.
- **Be alert for explosions and toxic smoke, and stay upwind.** Electrical equipment contains oil and other hazardous materials**.**
- **Prevent contamination of water resources.** Monitor for oil runoff and direct it away from catch basins, surface waters, and wetlands.
- **Protect area exposures** to prevent fire from spreading.
- **If an equipment fire must be suppressed,** utility personnel and the incident commander will tell you how to proceed.

#52810 © 2021 Culver Media, LLC 800-428-5837

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 CPS Energy, evacuate the public, and protect area exposures.**
- **Let transformers burn until otherwise instructed by utility personnel.**

#52810 © 2021 Culver Media, LLC 800-428-5837

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 CPS Energy.**
- **Keep 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.** Your gear does not insulate you against electric shock.
- **When responding to a substation or transformer fire, let it burn,** evacuate the area, and protect exposures.

#52810 © 2021 Culver Media, LLC 800-428-5837

Contact Information

- For electrical or natural gas emergencies, call 911 and CPS Energy at **210-353-HELP (4357).**
- For additional information, visit our website at **cpsenergy.e-smartresponders.com.**

#52810 © 2021 Culver Media, LLC 800-428-5837

first responder beware®

Thank you.

CPS ENERGY®

#52810 © 2021 Culver Media, LLC 800-428-5837