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# Staying Safe While Saving Others

## Electrical Safety for First Responders



**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).**

# 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 will seek all paths to ground, including, but not limited to:**
  - 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.



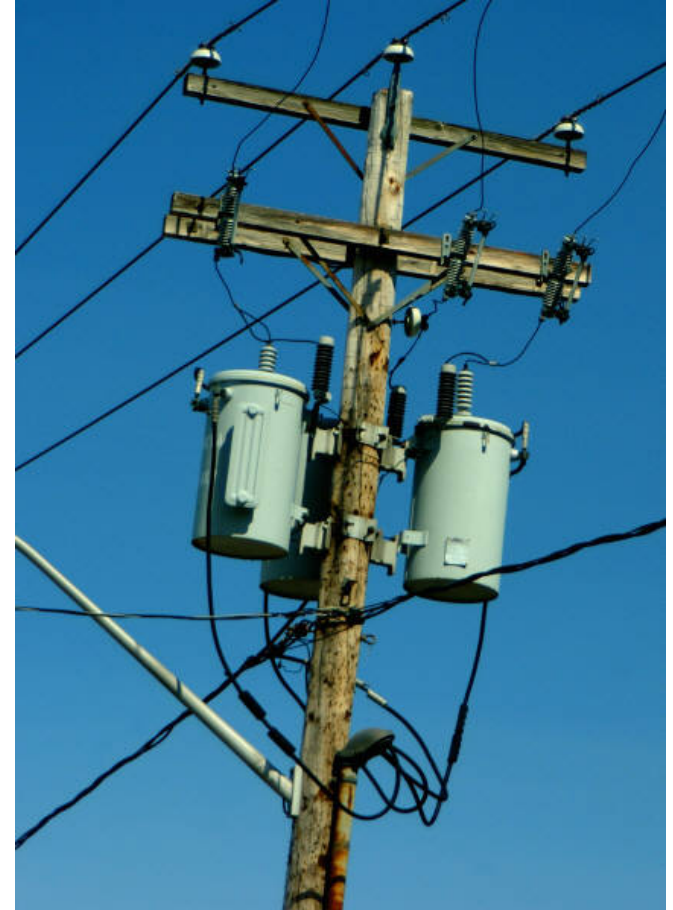
# Hands Off Electrical Systems

- **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. Instead, turn off power at the main circuit breaker.
  - **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.**



# 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 911.
- **Provide the best possible directions** to the location.
- **Secure the area.**



# Always Observe the 20-Foot Rule

- **Personnel, ladders, and fully extended aerial equipment must never get closer than 20 feet from overhead power lines up to 50,000 volts.**
- **Higher voltages require greater clearances.** For example, higher-voltage lines on large transmission towers require additional clearances of up to **50 feet**.
- **There is no uniform system for identifying power line voltage.** When in doubt, contact your FirstEnergy electric company 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 all personnel and equipment as far away as possible from overhead power lines**, including the service wires that run from utility pole to buildings.



# Be Aware of Overhead Power Lines

- **If your aerial equipment contacts a power line:**
  - **The aerial equipment should be considered energized.**
  - **Warn others to stay away.** Have someone **call 911** immediately.
  - If you can do so safely, **move the equipment far away from the line.**
  - **If the equipment cannot be moved, stay put, and warn others to stay away** until FirstEnergy utility crews 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. Do NOT touch the equipment and the ground at the same time. Land with your feet together.
- **Shuffle at least 30 feet away with small steps**, keeping both 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 as far away as possible from fallen power lines and objects that may be energized—never get closer than 30 feet.
  - Downed transmission lines from large towers require a distance of 100 feet.
- **Never touch or attempt to move fallen lines or objects contacting them.**



# Use Extra Caution Near Downed Power Lines

- **DO NOT** enter, approach, or touch areas or vehicles that may be energized.
  - Notify your FirstEnergy electric company through 911.
  - Instruct occupant(s) to drive the vehicle far away from the line if this can be done safely.
  - If the vehicle cannot be moved, instruct the occupants to stay put until FirstEnergy utility crews 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 at least 30 feet away with small steps, keeping both feet together and on the ground at the same time.**
  - **Demonstrate the proper procedure from a distance.**
- **If victims 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 your FirstEnergy electric company through 911 and wait for their personnel to arrive. Never attempt to enter a substation without utility personnel present.**
- **Isolate the area **AT LEAST** 300 feet in all directions. Keep unauthorized persons away.**
- **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.

# 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 911, evacuate the public, and protect area exposures.**
- **Let transformers burn, unless or until otherwise instructed by utility 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 your FirstEnergy electric company through 911.**
- **Hands off electrical systems.**
  - Never attempt to disconnect electrical service.
  - Never touch power lines.
- **Keep all personnel and equipment as far away as possible from overhead power lines**, including the service wires that run from utility poles to buildings. Assume all power lines are energized.
- **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, and protect exposures.

# Contact Information

- In case of emergency, call 911 to reach your FirstEnergy electric company.
- To learn more about first responder safety, visit, **[firstenergycorp.com/firstresponders](https://firstenergycorp.com/firstresponders)**.

# Thank You

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