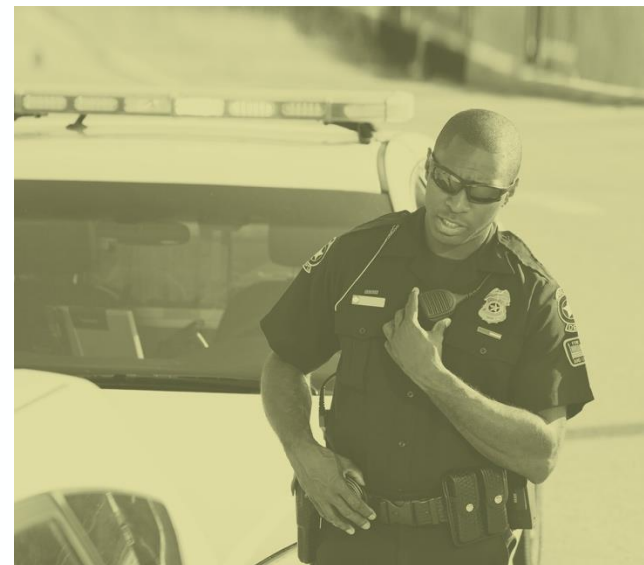




# first responder beware<sup>®</sup>



## Electrical Safety for First Responders



PPL companies

**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**
- **Always Assume PV Systems Are Energized**
- **Use Extra Caution Near Downed Power Lines**
- **Manage Substation, BESS 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 electrical shock can be fatal.**
- **Standard-issue protective gear DOES NOT insulate you against electrical shock.**
- **Electrical 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. Call LG&E at 800-331-7370 or KU and ODP at 800-981-0600 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 touching power lines.
- **If power lines or electrical equipment are involved in an incident,** have your dispatcher contact **LG&E, KU and ODP.**
- **Provide the best possible directions** to the location.
- **Secure the area.** Be prepared for the utility vehicle to arrive and make sure there is a clear path to the incident site for LG&E, KU and ODP personnel.



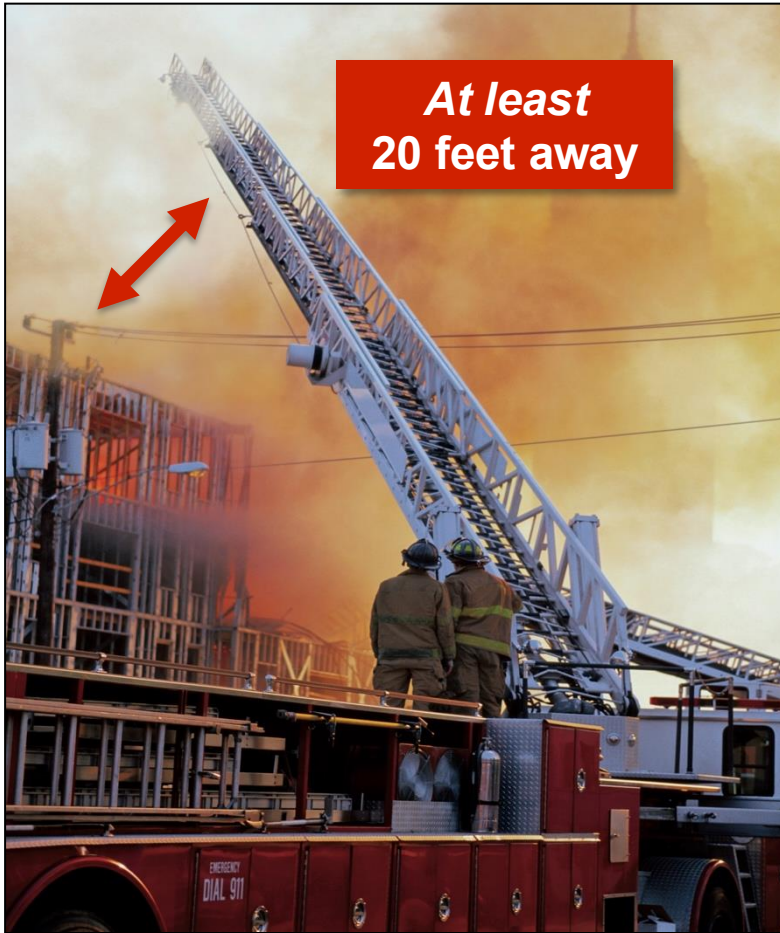


# Always Observe the 20-Foot Rule

- **Keep yourself and your equipment *at least 20 feet away* from overhead power lines. Drones must be kept *at least 200 feet away*.**
- **There is no uniform system for identifying power line voltage.** When in doubt, contact LG&E, KU and ODP for clearance information.
- **Have a spotter monitor the placement of ladders and aerial equipment** to ensure they remain a safe distance away from power lines.

**Electrical safety distances given are minimums. Higher voltages require greater clearances. 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.
- **Use a spotter** to keep your aerial equipment away from power lines.
- **Never use a solid water stream** to fight fires near overhead power lines.

# Be Aware of Overhead Power Lines

- **If your aerial equipment contacts a power line:**
  - **Remain on the equipment.** Move the equipment away from the line if you can do so safely. If the equipment cannot be moved, all personnel on the equipment should remain there.
  - **Warn others to stay far away.** Anyone who touches the equipment or even the ground nearby may be injured or killed.
  - **Have someone call LG&E at 800-331-7370 or KU and ODP at 800-981-0600 immediately.** Utility personnel will respond quickly, switch off the power, and tell you when it is safe to get off the equipment. Wait for their instructions.

# 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 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.



# Always Assume PV Systems Are Energized

- **In incidents involving PV systems,** be alert for electrical, structural and chemical hazards.
  - **Consider all PV equipment,** junction boxes, batteries and wiring to be energized at all times. Do not touch or cut into PV modules, conduit or equipment.
  - **Prepare for fires** near a rooftop array to grow unexpectedly, in some cases causing rapid structural failure.
  - **Always wear full protective clothing and SCBA.** Batteries that ignite or overheat may release hazardous materials and highly toxic and explosive gases.



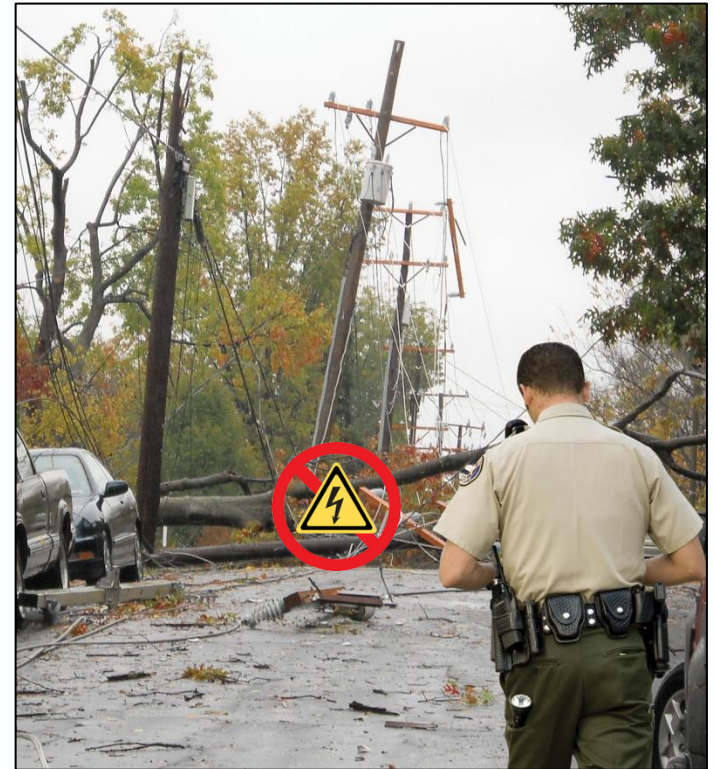
# Use Extra Caution Near Downed Power Lines

- Assume every downed power line, and anything in contact with it, is **energized and dangerous**.
- Park emergency vehicles **away from fallen lines**.
- Secure the area:
  - **Keep yourself and the public as far away as possible from ALL 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**.
  - Remember, wind and electric charge can cause lines to whip and move.
- **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** enter, touch or even approach a vehicle that may be energized. Resist the temptation to extract passengers.
  - Call LG&E, KU and ODP.
  - Instruct occupants to drive the vehicle far away from the line if this can be done safely.
  - If the vehicle cannot be moved, instruct all occupants to stay put until LG&E, KU or ODP personnel give the all clear. Staying in the vehicle is their **BEST** protection against electrical 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 touching the vehicle and the ground at the same time.**
  - Tell them to shuffle away with small **steps**, keeping both 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.





# Substation and BESS Fires

- **Burning electrical equipment is already ruined and will be replaced.** The safest course of action is to **LET IT BURN.**
- Contact LG&E, KU and ODP 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 a burning substation or Battery Energy Storage System (BESS).
- **Be alert for explosions, toxic smoke and oil releases.** Stay upwind.
- **Protect area 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.
- **If an equipment fire must be suppressed**, utility personnel and the incident commander will tell you how to proceed.
- **Never attempt to open, disturb or operate** any LG&E, KU or ODP 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 touch them, you could be killed.
- **Call LG&E, KU and ODP, evacuate the public, and protect area exposures.**
- **Let transformers burn until otherwise instructed by LG&E, KU or ODP 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 LG&E, KU and ODP**. Be prepared for the utility vehicle to arrive and make sure there is a clear path to the incident site for utility personnel.
- **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*.**
- **Use a spotter to keep equipment away from power lines.**
- **Even low-voltage electrical shock can be fatal.** Your gear does not insulate you against electrical 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.**



# Additional Information

- In case of an electrical emergency, call **911** and LG&E at **800-331-7370** or KU and ODP at **800-981-0600**.
- For additional information, visit **LG&E, KU and ODP's** first responder safety website at **[lge.ku.e-smartresponders.com](http://lge.ku.e-smartresponders.com)**.



**first responder**  
**beware**<sup>®</sup>

**THANK YOU**