

STANISLAUS CONSOLIDATED FIRE PROTECTION DISTRICT  
POLICIES & PROCEDURES

ARTICLE: C-56  
SECTION: Operations Division  
DATE: August 11, 2008  
SUPERSEDES: NEW  
TITLE: Energized Electrical Equipment/Power Line Response

It is the policy of the Stanislaus Consolidated Fire Protection District to respond to reports of power lines down and other hazards involving energized electrical equipment (transformers, substations, electrical vaults, etc.) for fire control and public safety. It is the responsibility of the company officer to maintain that level of safety until relieved by another fire company, fire officer, police agency, or utility company.

**PURPOSE**

This procedure will establish a standard approach and response to the report of power lines down. Power lines can come in contact with the ground as a result of storm activity, fire, or vehicles striking power poles. In all cases, the potential for electrical shock/electrocution and secondary fire must be considered.

**ELECTRIC SAFETY AWARENESS**

Electricity always seeks its lowest level or ground. It will travel any path it can as it seeks a ground. A direct path to ground is when contact is made between something energized and a portion of your body such as your hand, arm, head, or other body part. An indirect path to ground happens when you are holding something or touching an object that is in contact with something energized. This could include tools or other equipment you may be holding or touching such as a fence, vehicle, or other object that may be in contact with something energized.

*Gradient Voltage (Step and Touch Potential)*

When power lines are down, they will energize the ground around them. For example: point of ground contact could be 700 volts. This voltage will lessen as it radiates out from this point; for example, 400 volts. If your feet are in the areas where there is a voltage difference, you could complete the circuit and be the source to ground. This is called “step potential.” This danger could be indicated by a tingling sensation in the feet and serve as a warning to back away from the area to a safer area.

## **Key Points**

- NEVER assume that a downed power line is dead or de-energized.
- Downed power lines must always be considered energized with potentially lethal current.
- Lines can reset and become “hot” or “energized” again by manual operation of a switch or by automatic re-closing methods (either method from short or long distances away), by induction where a de-energized line can become hot if it’s near an energized line, or through backfeed conditions.
- Power lines tend to have “Reel Memory” and may curl back or roll on itself when down.
- Use caution if having to direct water streams on or around energized electrical equipment. Hose streams conduct current! Never spray hose streams directly onto the power lines.
- If you are unable to secure the source, back out of the area and protect the exposures.
- PCB Hazards: Smoke is potentially fatal, ALWAYS wear a SCBA when fire is involved or within closed spaces creating an IDLH atmosphere. Avoid pools of PCB fluid. Dam & dike PCB fluid if at all possible and summon a response from County Environmental Resources.
- Always wear the appropriate safety clothing when responding to these types of emergencies. This shall include structural gear at a minimum for incidents involving fire and motor vehicle accidents. Wildland safety gear may be utilized for incidents during the suppression of wildland fires.

## **RESPONSE TO POWER LINES DOWN**

- Consider ALL downed lines to be “Hot”.
- Secure the area / deny entry.
- Place apparatus away from down lines and poles.
- Locate both ends of the downed wires if at all possible.
- Request the utility company to respond.
- In the event of multiple lines/poles are down over a large area, call for additional resources to secure the area.
- In the event multiple resources are responding have the appropriate dispatch centers alert all responding units of the potential danger and the location of the lines on the incident.

## **DOWNED POWER LINES AND VEHICLES**

- Do not touch the vehicle until power can be secured by utility company.
- Have the occupants remain inside the vehicle.
- Place apparatus a safe distance away from the down lines.
- Request the utility company expedite the response.
- If vehicle occupants must leave the vehicle (fire or other threat to life) instruct them to open the door, not step-out! They should jump free of the vehicle without touching the vehicle and ground at the same time.

**SUB-STATION, TRANSFORMER, ELECTRICAL VAULT AND MANHOLE FIRE**

- Clear and secure area.
- Request the utility company respond.
- Be aware of explosion potential.
- Place apparatus in a safe location away from overhead power lines.
- All personnel shall have structural PPE donned as well as SCBA.
- Protect any exposures that may be threatened.
- Do not make any entry until ALL electrical equipment and sources have been de-energized by utility company. All equipment shall be **Locked-out/Tagged-out** to prevent any accidental re-energizing of equipment.

This procedure shall assist employees in maintaining a safe working environment while in the field.

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Approved by: \_\_\_\_\_

Date: September 10, 2008