



FACT SHEET

Worker Safety in a Power Outage

Preventing Electrocutions by Undetected Feedback Electrical Energy

During power outages, many people use portable electrical generators. If the portable generator is improperly sized, installed, or operated, it can send power back to the electrical lines. This problem is called **backfeed** or feedback in the electrical energy in power lines. **Backfeed can seriously injure or kill repair workers or people in neighboring buildings.**

This fact sheet provides workers with information on how to restore power safely to local communities when a portable generator is being used in a home or homes in the area.

Effects of Backfeed

The problem of backfeed in electrical energy is a constant risk for electrical energy workers. Electrocutions are the fifth leading cause of all reported occupational deaths.

Understanding the Process

When power lines are down, residents can restore energy to their homes by another power source such as a portable generator. If the generator is plugged into a household circuit, the electrical current could reverse, go back through the circuit to the power grid, and then increase in voltage. If a worker attempts to repair power lines when this happens, the worker could be electrocuted. Following certain safety guidelines can reduce this risk.

Safeguards against Backfeed

- **Workers should treat all power lines as "hot"** unless the lines have been de-energized and grounded. Because of the possibility of a feedback circuit, the worker should ground all lines on both sides of the work area unless he/she is wearing the proper personal protective equipment.
- **Prevent electrocutions by conducting standard tests** to decide if there is high voltage in the power lines. Low voltage includes voltages from 50 to 600 volts. High voltage includes voltages of 601 volts to 230,000. Extra high voltage is any voltage over 230,000 volts.
 - **Workers should also use low voltage testing equipment** such as glowing a neon light or light-emitting diode type equipment to determine whether there is low voltage present. High voltage tests may not identify lower voltage levels. Lower voltages are also deadly.
- **Power lines should not be repaired or otherwise accessed without adequate personal protective equipment** such as NEC rated and approved gloves and sleeves.

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How the Public Can Help

- **Have a trained, qualified electrician install a portable generator.**
- **Be sure that the main circuit breaker is OFF** and locked out prior to starting the generator. This will help protect utility workers from possible electrocution.

For more information, visit www.bt.cdc.gov/poweroutage, or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (español), or (866) 874-2646 (TTY).

August 18, 2004

Page 2 of 2