

Working Safely Around Downed Electrical Wires

Electrical hazards multiply for workers involved in cleanup and recovery efforts following major disasters and weather emergencies. Life-threatening danger exists around downed and low-hanging electrical wires which can still be energized following a storm.

Safety First

Always consider all electrical equipment, lines and conductors to be energized. If you notice downed wires or damaged electrical equipment, contact appropriate utility personnel if you can. Circuits do not always turn off when a power line falls into a tree or onto the ground. Reloaders automatically try to reset circuits and restore power when it is interrupted. Even if electric lines are not sparking or humming, fallen electric lines can electrocute you if you touch them or the ground nearby.

Energy

Downed wires can energize other nearby objects, such as fences, water pipes, bushes and trees, buildings, and telephone/CATV/fiber optic cables. Even manhole castings and reinforcement bars (rebar) in pavement can become energized by downed wires. During storms, wind-blown objects such as canopies, aluminum roofs, siding, and sheds can also be energized by downed wires.

Backfeed

The improper connection of portable generators to a building's electrical system is one way hazardous backfeed conditions are created!

Backfeed is a hazardous condition created when temporary sources of electricity (such as a generator) are connected to the damaged permanent system causing electricity to flow inside and outside a structure through connected lines and equipment. In emergency conditions, portable generators should only be used as standalone sources of power, and (except for properly wired by-pass or isolation connections) not connected to a building's electrical system. If a generator is connected to a building's electrical

system, it must be done with a properly installed main breaker bypass to prevent electricity from flowing out of the building and into downed power lines.

Some other sources of backfeed include:

- Circuit ties/switch points
- Lightning
- Downstream events

Always ensure that proper lockout/tagout procedures are followed to avoid connecting two electrical sources to the same circuit.

Rules to Live By

- Do **not** assume that a downed power line is safe simply because it is on the ground or it is not sparking.
- Do **not** assume that any wire is a harmless telephone, television, or fiber-optic cable, and does not carry lethal current.
- Treat everything electrical as energized until tested and proven to be de-energized.
- Never go near a downed or fallen electric power line.
- Electricity can spread outward through the ground in a circular shape from the point of contact. As you move away from the center, large differences in voltages can be created.
- Never drive over downed power lines. Assume that they are energized.
- If contact is made with an energized power line while you are in a vehicle, remain calm and do not get out unless the vehicle is on fire. If possible, call for help.
- If you must exit any equipment because of fire or other safety reasons, try to jump completely clear, making sure that you do not

touch the equipment and the ground at the same time. Land with both feet together and shuffle away in small steps to minimize the path of electric current and avoid electrical shock. Be careful to maintain your balance.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.

- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see [OSHA's Workers page \(www.osha.gov/workers\)](http://www.osha.gov/workers).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.



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