

BULLETIN

Risk Control

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Damaging a Utility Line While Excavating

There is always the possibility of an explosion or an electrocution from an underground utility line, when excavation occurs during a planned project or an emergency repair. It is recommended that all water utilities establish an emergency response plan, and review it with crews before excavation starts. The plan should include proper procedures for determining the location of underground utilities, contacting and coordinating with the utility companies to establish the locations of underground lines, and taking all necessary precautions to prevent worker injuries or death, if an underground line is damaged.



A gas explosion occurred in St. Cloud, Minnesota on December 11, 1998. A work crew installing a utility pole support anchor punctured an underground natural gas pipeline, resulting in the explosion. The blast killed four people, injured eleven, destroyed six buildings, and caused over \$400,000 in damages. The crew immediately informed their supervisor, but the supervisor did not notify the utility until 25 minutes after the damage. About 40 minutes after the damage an explosion occurred killing the gas technician, a utility locator specialist who had arrived on the scene, a person in a building, and a pedestrian. The photo can also be seen at <http://en.wikipedia.org/wiki/File:StCloudExplosionAerialPhoto.jpg>. It is public domain.

Utility damage emergency response plan template

If your excavation damages a utility line:

- Stop all work immediately.

- Do not attempt to repair the damaged line. If an injury has occurred, call 911 immediately.
- Call the utility owner to inform them of the damage. They will dispatch the proper crew to repair the damaged line.
- Call the One Call Center at 8-1-1 to inform them of the damage. Have your original locate request ticket number available.
- Wait for the proper utility crews to arrive onsite to make repairs. They will inform you when it is safe to continue your project and go back to work.

Facts about natural gas

- Natural gas is colorless and non-toxic.
- Natural gas is odorized to smell like rotten eggs or skunks.
- Natural gas is combustible.
- Natural gas may become explosive when trapped in an enclosed space.
- Ignition sources can be open flame, cigarettes, light switches, garage door openers, pagers, cell phones, vehicles and other equipment.

Signs of an ongoing natural gas leak

- Distinct natural gas odor.
- Areas of dead vegetation directly above the buried natural gas line.
- A natural gas meter dial that continues to move after all natural gas appliances and equipment have been shut off.
- After watering or rain, bubbles appear directly above the buried gas line.

Natural gas safety tips if you damage a natural gas line

- Stop all work. Call 911 and the utility owner immediately.
- Leave the work area and warn others. Back up at least 500-feet. This may include stopping traffic, shutting down all equipment, and the evacuation of nearby residences or businesses.
- Shut down and control all ignition sources, such as cell phones and cigarettes.
- Do not attempt to shut off, squeeze, or clamp the gas line.
- Do not bury the broken or damaged line.
- Do not return until the area is declared safe by the utility.

Facts about electricity

- Electricity always seeks a path to ground. If you become a part of this path, you can be injured or killed.
- Good conductors include water, your body, tree branches, tools, poles and ladders.
- Insulators isolate electricity, but they can also become a conductor if they are contaminated or broken.



Electricity safety tips

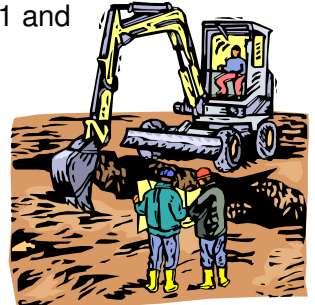
- Survey the site for overhead power lines and underground vaults.
- Point out known power lines to all of your crews.
- Clearly mark your boundaries, to keep people and equipment a safe distance away from overhead power lines. Safety regulations require at least ten-feet of clearance from voltages under 50kW. Higher voltages require greater distances.
- If you must work closer, contact the utility to review the safety requirements.
- Assume all electric lines are energized.
- Always use a spotter. It is difficult for equipment operators to judge safe distances by themselves. Dedicate a person to keep employees and equipment safe.
- Never touch any utility wire, and do not touch anyone who is in contact with an electric wire.



- Never enter electrical substations or utility vaults.
- Never disconnect or reconnect electric service lines.

If equipment comes in contact with an electric line

- Stop all work. Call 911 and the utility owner immediately.
- Move the equipment away from the line if you can do so safely.
- Warn others to stay away. Anyone on the ground who touches the equipment is in danger of being killed or injured.
- Stay on the equipment until an emergency responder or the utility indicates it is safe to get off.
- If it is unsafe to stay on the equipment, such as when a fire forces you off the equipment, try to jump clear without touching the ground and equipment at the same time. Hop away keeping both legs together for at least 50-feet.



The guidelines for safe excavation and mark-out procedures are covered under *California Government Code 4216 – 4216.9*. These guidelines can be found at the USANorth (<http://usanorth.org/>) or DigAlert (<http://www.digalert.org/>) websites. Under 4216.4 (c): “An excavator discovering or causing damage to a subsurface installation, including all breaks, leaks, nicks, dents, gouges, grooves, or other damage to subsurface installation lines, conduits, coatings, or cathodic protection, shall immediately notify the subsurface installation operator. The excavator may contact the regional notification center to obtain the contact information of the subsurface installation operator. If high priority subsurface installations are damaged and the operator cannot be contacted, the excavator shall call 911 emergency services.” Failure to follow these guidelines can subject an excavator to civil penalties of up to \$50,000. This would be in addition to any property or liability damages that may occur.

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