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**Work Safely Around Utility Lines**

# Respect the Power of Electricity

- **When you arrive at a job site, always identify power lines, poles, guy wires and pad-mounted equipment, and point them out to your crew.**
- **Look for overhead lines** hidden by trees or buildings.
- **Consider *all* overhead lines to be energized and potentially dangerous,** including the service drops that run from utility poles to buildings.
- **Check the site daily** because conditions may change.
- **Review your emergency plan** before work begins so everyone knows what to do in case of power line contact.



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## For Tools and Equipment Other than Cranes and Derricks Used in Construction, Observe the 10-Foot Rule

- Cal/OSHA requires that you keep yourself and your equipment (other than cranes or derricks used in construction) **at least 10 feet away** from overhead power lines carrying up to 50 kV.
- Higher-voltage lines require greater clearances. Contact SMUD at 1-866-473-9582 and consult Cal/OSHA for clearance information.
- Tree trimmers must also maintain all required safety clearances. Take measures to ensure cut limbs, branches and tools do not fall onto power lines.
- If your job requires you to work closer than 10 feet from power lines, call SMUD well in advance to make safety arrangements.
- Electrical safety distances given here are minimums.
- Always use the maximum possible clearance, and clearly mark boundaries to keep workers and equipment the required distance away.

# Cranes and Derricks in Construction

- **Keep the crane boom and load *at least 20 feet away*** from lines up to 350 kV and ***50 feet away*** from lines greater than 350 kV but at or less than 1,000 kV. Always assume the line is energized, and allow nothing closer unless you have confirmed with the utility owner/operator that the line has been de-energized.
- **As voltage increases, clearance distances also increase.** Contact SMUD at 1-866-473-9582 and consult Cal/OSHA for specific clearance requirements and encroachment prevention precautions.
  - Once you have established the required clearance, mark a safety boundary with tape, signs or barricades.
- **Whenever cranes or derricks are used on your job site,** contact SMUD well in advance. They will confirm safety clearances and make any necessary facility protection arrangements.



# Use a Dedicated Spotter



- **Always use a dedicated, qualified spotter on the ground** to safely judge distances between hoisting equipment and power lines.
- **Crane and derrick operators**, you must maintain continuous contact with a dedicated spotter to comply with line clearance requirements.
- **The spotter's only responsibility should be power line safety.** Don't divide the spotter's attention with other tasks.

# If Your Equipment Contacts a Power Line

- Both the equipment and the line should be considered energized.
- Move the equipment away from the line if you can do so safely.
- Remain on the equipment.
- Warn others to stay far away.
- Have someone call 911 and then SMUD immediately at 1-888-456-7683.
- If fire or other imminent danger forces you off:
  - Do NOT touch the equipment and the ground at the same time.
  - Jump clear, and land with your feet together.
  - Shuffle away with small steps, keeping both feet close together and on the ground at all times, or hop away on two feet, keeping both feet together.
  - Do not return to the equipment until utility personnel tell you it is safe.
- Never touch fallen power lines or anything they may be contacting.



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# Notify 811 Before You Dig. It's the Law!



**Know what's below.  
Call before you dig.**

- **Dial 811 or submit an electronic ticket at [california811.org](https://california811.org) before you dig or move earth in any way.** This free service will arrange to mark underground utility lines so you can dig safely.
- **Before you notify 811, pre-mark your proposed excavation area** with white paint, flags and/or stakes so locators can easily identify and mark affected utilities.
- **If you don't notify 811, you risk hitting an underground line.** You, your crew members or others could be hurt or killed. You may be held liable for any resulting damages, as well as outage and repair costs.
- **As of July 1, 2020, California farmers may apply to 811 for an Area of Continual Excavation (ACE) ticket, which is valid for one year. Visit <https://energysafety.ca.gov/what-we-do/underground-safety-board/area-of-continual-excavation> for more information.**

*Always contact your state 811 center before digging and for the most current requirements.*

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# Wait the Required Time

- In California, wait at least two working days, not including the date of your request, weekends and legal holidays.
- Confirm that all utilities have responded by checking Electronic Positive Response at [california811.org](http://california811.org).
- If you wait the required time and the locate is not completed, **do not dig**. Notify the 811 service that your locate request has not been fulfilled.



*Always contact your state 811 center before digging and for the most current requirements.*



# Conduct a Visual Site Survey











- **Do not rely exclusively on the locate marks.** Look for visual indicators of underground facilities that have not been marked, such as meters, valves and pad-mounted transformers.
- **Check with property owners about any private underground lines** that would not have been marked by the locator.
- **Also check for signs of something buried after the locate was completed,** such as a fresh trench.
- **If you find a newly installed or unmarked facility,** call 811.

# Respect the Marks, and Dig with Care

- **Not all utilities are 811 members.** You are responsible for notifying non-member utilities about your project. Check with 811 for more information.
- **Respect the locator marks.** Maintain utility indicator marks, and follow them when digging.
- **Dig with care.** Exercise extreme caution when digging near buried utilities, and have a spotter present to observe the excavation whenever heavy equipment is used.
- **Know the underground utility color code:**

## AMERICAN PUBLIC WORKS ASSOCIATION COLOR CODE FOR LOCATOR MARKS

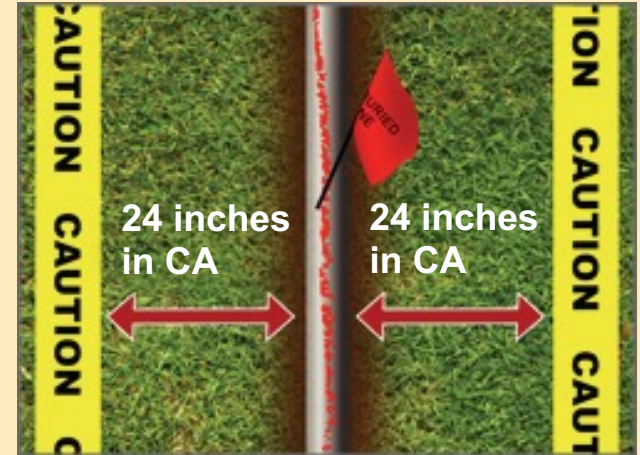


	Electric power lines
	Gas, oil or steam pipelines
	Communications lines, cables or conduit
	Potable water
	Reclaimed water, irrigation and slurry lines
	Sewers and drain lines
	Temporary survey markings
	Proposed excavation

# Respect the Tolerance Zone

- **Adhere to state laws for digging within the “tolerance zone.”** This safety area spans the width of a marked utility line plus a state-mandated distance from each indicated outside edge of the line: 24 inches in California.
- **Hand dig prudently in this zone.**
- **Once visual identification has been achieved,** you may use mechanized digging equipment. Use a spotter to observe the excavation and help prevent damage when heavy equipment is used near power lines.
- **The tolerance zone is a *minimum* safety clearance.** Protect yourself by using the maximum possible distance.

*Always contact your state 811 center before digging and for the most current requirements.*





# Know When to Stop Digging



- If there are no locate marks after you have waited the required time, do NOT dig.
- If you do not understand the locate marks, do NOT dig.
- If you cannot visually verify the location of marked utility lines, STOP digging.
- If you find unmarked, mismarked or seemingly abandoned facilities, STOP digging.
- If you see signs of something buried after the locate was complete, such as a fresh trench, STOP digging.
- If the marks fade or are destroyed, STOP digging, and contact 811 to request a new ticket.



# Natural Gas Basics

- **Natural gas travels through pressurized underground pipelines of varying diameters.** The size of a gas line is NOT a reliable indicator of the internal pressure.
- **Local natural gas distribution utilities add a distinctive, sulfur-like odor to natural gas to assist in the detection of leaks.** However, in certain conditions, you may not be able to smell this odorant.
- **Leaking natural gas can be ignited by a tiny flame or spark—even from a lit cigarette or a phone.**



# Watch Out Around Pipeline Markers

- Pipeline markers indicate the need for **extra care** around natural gas transmission pipelines.
- These markers are **general indicators only**. For security purposes, they do not show the exact location, path, depth or number of gas pipelines.
- The markers should **never be used as a substitute for calling 811**.
- Call the number on the marker if you notice any type of **suspicious activity** or excavation occurring nearby without gas utility personnel present.



State law requires you have a SMUD representative stand by when digging within 10 feet on either side of our high-pressure natural gas pipelines.

# Natural Gas Leak Detection: Look, Listen and Smell

- **Natural gas utilities add a distinctive, sulfur-like odor to natural gas to assist in leak detection.** However, this odor may fade or be difficult to distinguish, and not all gas transmission lines are odorized.
- **Don't rely on your nose alone. Use your senses of sight, hearing and smell to detect a natural gas leak.** Here are the signs:
  - The distinctive odor of natural gas
  - Continuous bubbling in water
  - A hissing, whistling or roaring sound
  - Dead or dying vegetation (in an otherwise moist area) over or near a pipeline
  - Dirt blowing into the air from a hole in the ground
  - Exposed pipeline after an earthquake, fire, flood or other disaster
  - A damaged connection to a gas appliance



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# Natural Gas Emergencies

■ If you contact a natural gas pipeline or suspect a gas leak, take these steps:

- Warn others and leave the area immediately.
- Do NOT use matches or lighters, start an engine or operate any electrical device—even a phone. A spark could ignite leaking gas, causing a fire or explosion.
- Do NOT attempt to stop the flow of gas or fix the pipeline. Leave the excavation open.
- When you have reached a safe distance, report the incident:
  - Call **911** immediately if you suspect a gas leak. Federal code requires this.
  - Call **SMUD's gas emergency number at 1-800-877-7683** if you suspect a natural gas pipeline leak or contact a pipeline, even if damage is not apparent.
  - **Notify the** Underground Safety Board at **california811.org** within two hours.
- Stay far away from the area until SMUD personnel say it is safe to return.
- Report the incident to your supervisor.



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# Utility Safety Review

- Identify all power lines and electrical equipment upon arrival at a job site. Recheck the site daily and review your emergency plan.
- Keep yourself and all tools and equipment **at least 10 feet away** from *all* overhead power lines carrying up to 50 kV. Higher voltages require greater clearances, as do cranes and derricks used in construction.
- Always use a dedicated spotter.
- If a power line contact occurs, follow proper safety procedures, and immediately call **911** and then SMUD at 1-888-456-7683.
- Notify the underground utility locator service by dialing **811** or using the online ticket-entry system before you dig.
- Wait the required amount of time for lines to be marked. In California, that's two full working days, not including the date you notify the 811 service.
- Respect the marks and dig with care near buried utilities.
- Watch out around pipeline markers. Report any suspicious activity nearby.
- Know the warning signs of a natural gas leak.
- In a natural gas emergency, warn others and leave the area immediately, avoid spark hazards and call **911** and then SMUD's gas emergency number at 1-800-877-7683.
- If you damage a buried gas line or high-voltage power line, notify the Underground Safety Board within two hours.

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# Contact Information

- In an electrical emergency, call **911** and then **SMUD** at **1-888-456-7683**.
- In a natural gas pipeline emergency, call **911** and then **SMUD** at **1-800-877-7683**.
- The Underground Safety Board can be reached at **california811.org**.
- For additional information, visit the SMUD website at **smudsafety.com/Worker**.



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**Thank You**