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PUBLIC UTILITIES
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worker
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Work Safely Around Electric Lines

Click on each slide to advance.

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 coworkers.**
- **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.



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

- 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 the local electric utility for clearance information.
- If your job requires you to work closer than 10 feet from power lines, call the local electric utility 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 1000 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 the local electric utility and consult the OSHA regulations at [osha.com](https://www.osha.com) 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 the local electric utility 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 heavy 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.
- Stay on the equipment.
- Warn others to stay far away.
- Have someone call 911 and the local electric utility immediately.
- 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 together and on the ground at all times.
 - Do not return to the equipment.
- Never touch fallen power lines or anything they may be contacting.



Notify 811 Before You Dig



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

- **Dial 811 or enter an online locate request well in advance of digging or moving earth in any way.** This free service will arrange to mark underground utility lines so you can dig safely.
- **Before you call, 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 coworkers, or others could be hurt or killed. You may be held liable for damages and repairs.

Wait the Required Time

- **This wait time varies from state to state** and does not include weekends and legal holidays.
- **Do not dig until all utility owners have marked their lines or advised you that the area is clear to dig.**
- **If you wait the required time and the locate is not completed, do not dig.** Notify 811 to place another locate request.



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.
- **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:**

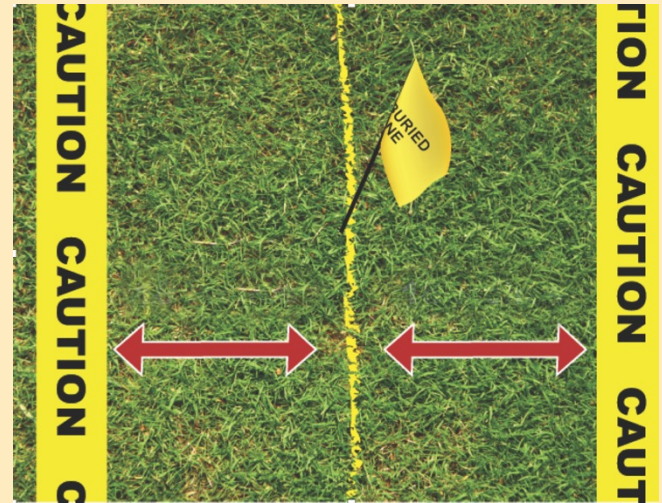
AMERICAN PUBLIC WORKS ASSOCIATION COLOR CODE FOR LOCATOR MARKS



	Electric Power Lines
	Gas, Oil, or Steam Pipelines
	Communications Lines, Cables, or Conduit
	Potable Water
	Reclaimed Water, Irrigation, and Slurry Lines
	Sewer 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 plus a state-mandated distance from each indicated outside edge.
- **Hand dig prudently in this zone** until you have determined the exact location of the lines.
- **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.



Know When to Stop Digging



- **If there are no locate marks after you have waited the required time**, do NOT dig. Notify 811, and wait until utility lines are marked or you have been notified that the area is clear of lines.
- **If you do not understand the locate marks**, do NOT dig. Ask your supervisor what you must do to work safely.
- **If you cannot visually verify the location of marked utility lines by hand digging**, STOP digging and contact the local utility immediately.
- **If you find unmarked, mismarked or seemingly abandoned facilities**, STOP digging. Assume all utility lines are in service, and report them to 811.
- **If you see signs of something buried after the locate was complete**, such as a fresh trench, STOP digging. Notify 811.
- **If the marks fade or are destroyed**, STOP digging and contact 811 to request a new ticket. Do not resume digging until the area is re-marked.

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 (other than cranes and derricks used in construction) *at least 10 feet away* from *all* overhead power lines carrying up to 50 kV. Always assume that lines are energized.
- Cranes and derricks used in construction must remain *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 1000 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.
- Always use a dedicated spotter.
- If a power line contact occurs, follow proper safety procedures, and immediately call **911** and the local electric utility.
- Notify the underground utility locator service by dialing 811 or using the online ticket-entry system before you dig.

Contact Information

- In case of an electrical emergency, call **911** and the local electric utility:
 - **RPU: 507.280.9191**
- For additional information, visit our website at **RPU.org/construction-center/safety.php**.



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