

Excavating Safely Around Utilities

Superior Safety Day
December 12, 2019



Presentation Outline



- About SWL&P
- 811 - Diggers Hotline & Utility Locating
- SWL&P's Utilities
 - About
 - Emergency Procedures
- Examples/Pictures
- Questions

About SWL&P



- Superior Water, Light & Power is a wholly owned subsidiary of ALLETE, Inc.
- Has provided electric, natural gas, and water for customers in Superior, WI and the surrounding area since 1889
- Highly regulated utility
 - OSHA
 - EPA
 - WI/MN DNR
 - WisDOT
 - PHMSA
 - PSCW
 - U.S. Department of Agriculture



811 – Diggers Hotline



- Free service for homeowners/contractors in WI to locate underground utilities
 - Does not cover private utilities
- Enter tickets via phone or online
 - Call 811, (800) 242-8511, or visit DiggersHotline.com
- Know what's below, put in a Digger's Ticket
 - **Never** assume you are clear to dig



Information Needed



Contact Information

- Your Name, Phone & Email
- Address, Street, City, State Zip Code
- Field Contact & Phone Number


Physical Location

- The city, township, or village your work will take place
- The address of your dig site
- The side of the street your dig site is on and the nearest intersecting road

Dig Site Info

- Start date
- Work Type
- Explosives, Equipment & Premarking
- Marking Instructions
- Remarks



Dial  or (800) 242-8511

www.DiggersHotline.com

HOMEOWNERS
GUIDE TO

DIGGERS HOTLINE[®]



SW&P

AN ALLETE COMPANY

1.
NOTIFY



Notify Diggers Hotline by calling 811 or making an online request 3 business days before work begins. Diggers Hotline will transmit information to affected utility operators.

2.
WAIT



Wait 3 business days for affected utility operators to respond to your request. On average, between 7-8 utility operators are notified for each request.

3.
CONFIRM



Confirm that all affected utility operators have responded to your request by comparing the marks to the list of utilities Diggers Hotline notified.

**DIAL 811 OR VISIT:
DIGGERSHOTLINE.COM**

4.
RESPECT










Respect the marks. The marks provided by the affected utility operators are your guide for the duration of your project. If you are unable to maintain the marks during your project, please contact Diggers Hotline to ask for a relocate.

5.
DIG CAREFULLY



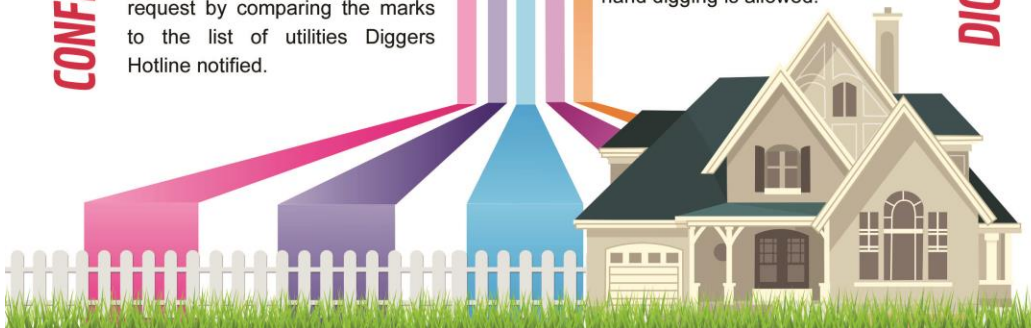
Dig carefully. If you can't avoid digging near the marks (within 18 inches on all sides), consider moving your project to another part of your yard. If you must dig near the marks no mechanized equipment can be used within 18 inches of the marks; only hand digging is allowed.

Utility Color Code

	Electric
	Gas, Oil, Petroleum or Gaseous Materials
	Communication, Cable TV, Alarm or Signal
	Water, Irrigation and Slurry Lines
	Sewer and Drain Lines
	Temporary Survey Markings
	Proposed Excavation

DIGGERS HOTLINE[™]

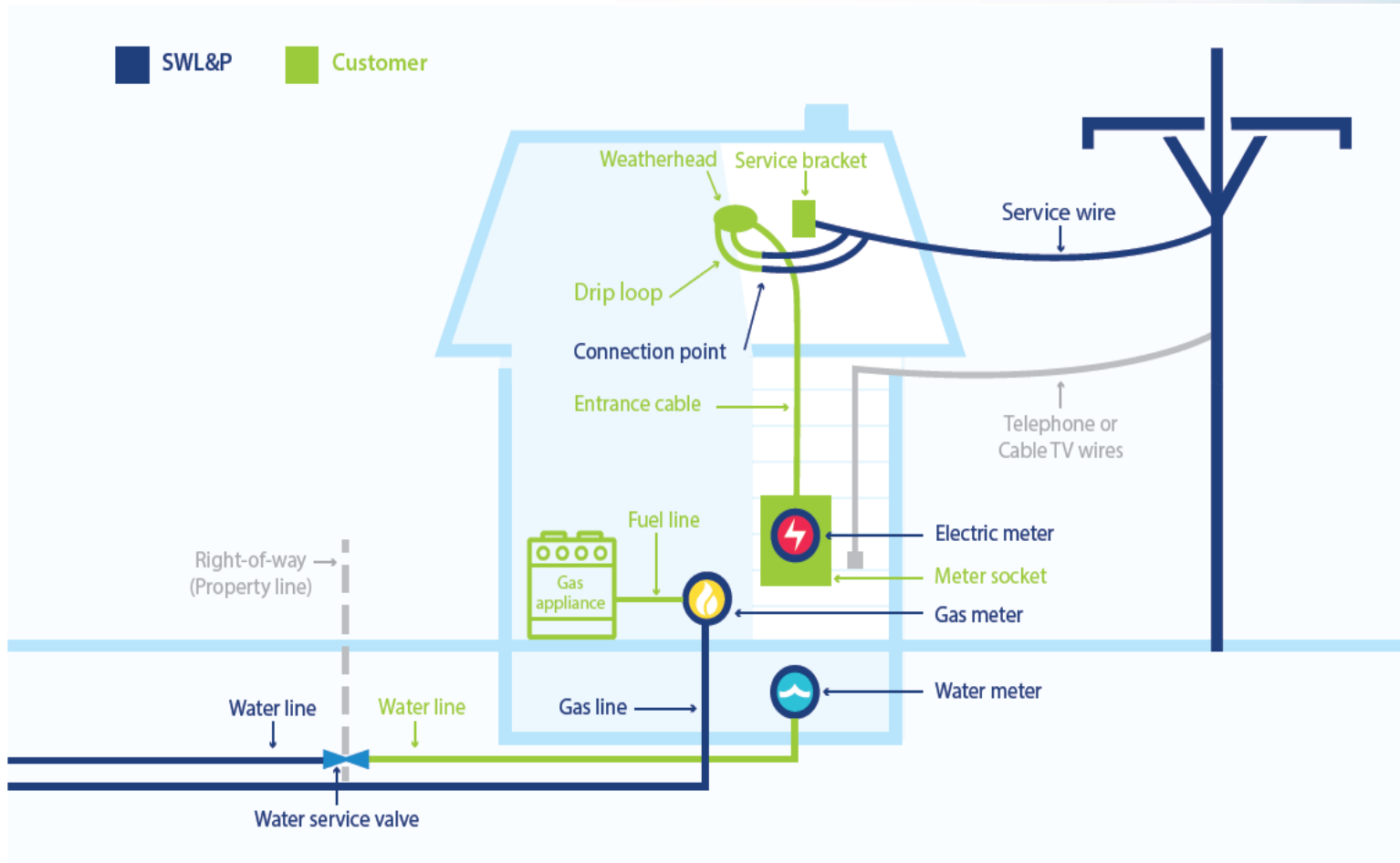
Dial 811
or file online at
DiggersHotline.com



Utility-Owned Lines vs. Private

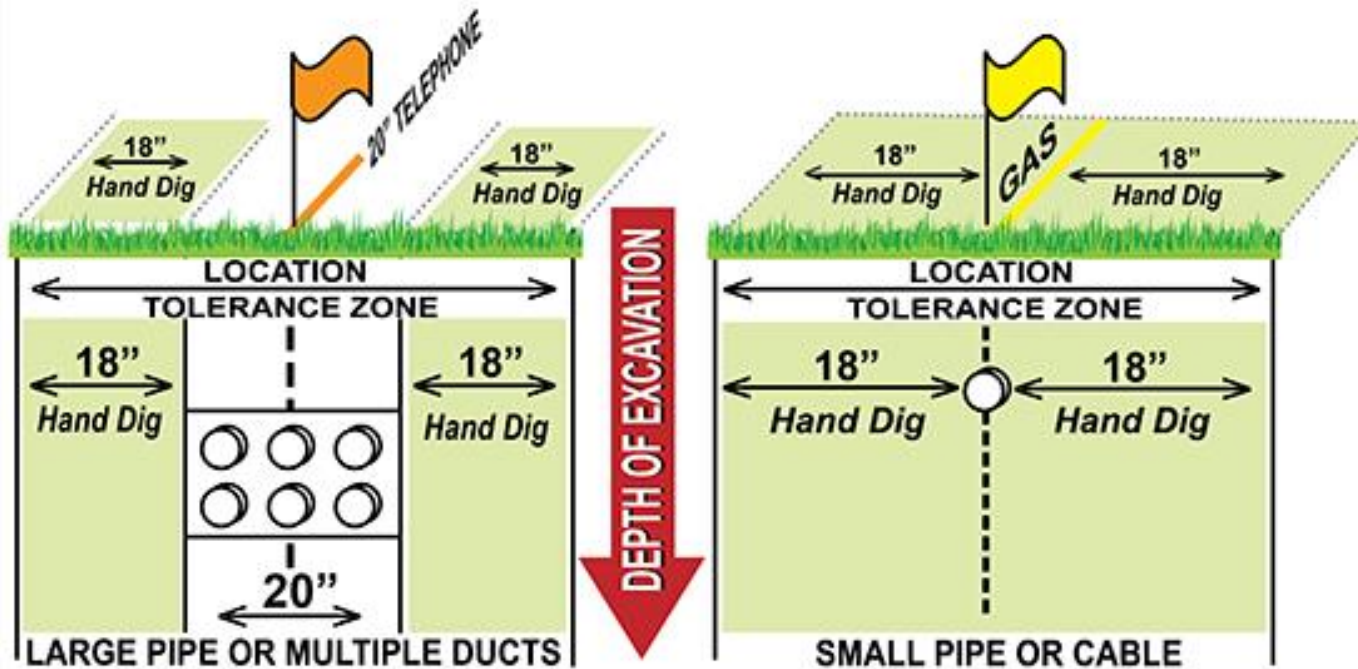


AN ALLETE COMPANY



Hand Dig or Hydrovac

DIGGING IN THE TOLERANCE ZONE



SWL&P's Utilities



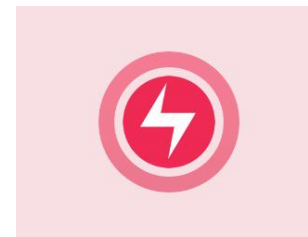
Providing **Security**, **Comfort**, and **Quality of Life** to our community since 1889.



Gas



Water

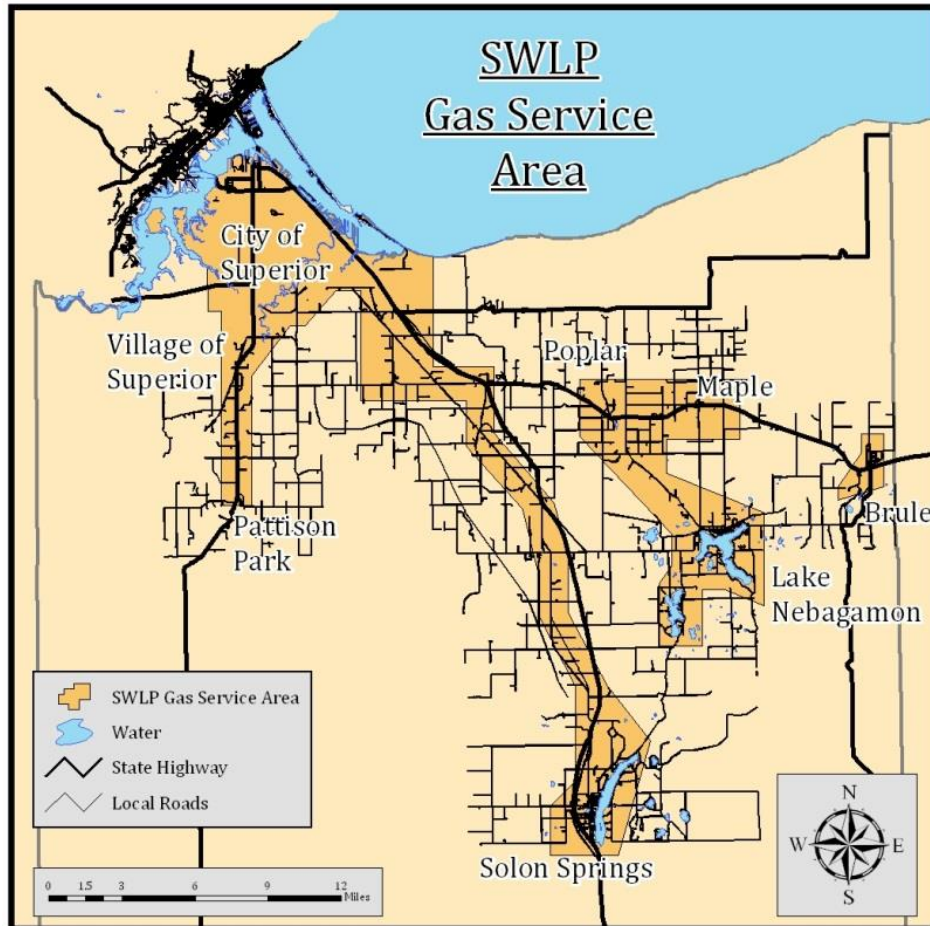


Electric

Approximately 13,000 Gas, 10,000 Water and 15,000 Electric customers.

SWL&P received approximately **4,280** Digger's Hotline tickets in 2019.

Natural Gas Service Territory



- City of Superior
- Village of Superior
- Solon Springs
- Lake Nebagamon
- Maple
- Poplar
- Brule



Natural Gas System

- System Age: 1959 to present
- 292 miles of mains and services
 - Coated Steel/MDPE
 - ½” up to 12”
- Distribution Pressures (odorized)
 - Low (< 10 PSI)
 - Intermediate (10 PSI – 25 PSI)
 - High (>25 PSI - 90 PSI)
- Transmission Line Pressure (unodorized)
 - 850 PSI



Natural Gas - Facts

- Lighter than air
- Colorless/odorless
 - Mercaptan added for “rotten egg” smell
- Explosive range = 5-15%
- *Typically* 1.5’ – 5’ deep
- Operator Qualifications
- Indicated by YELLOW paint markings/flags

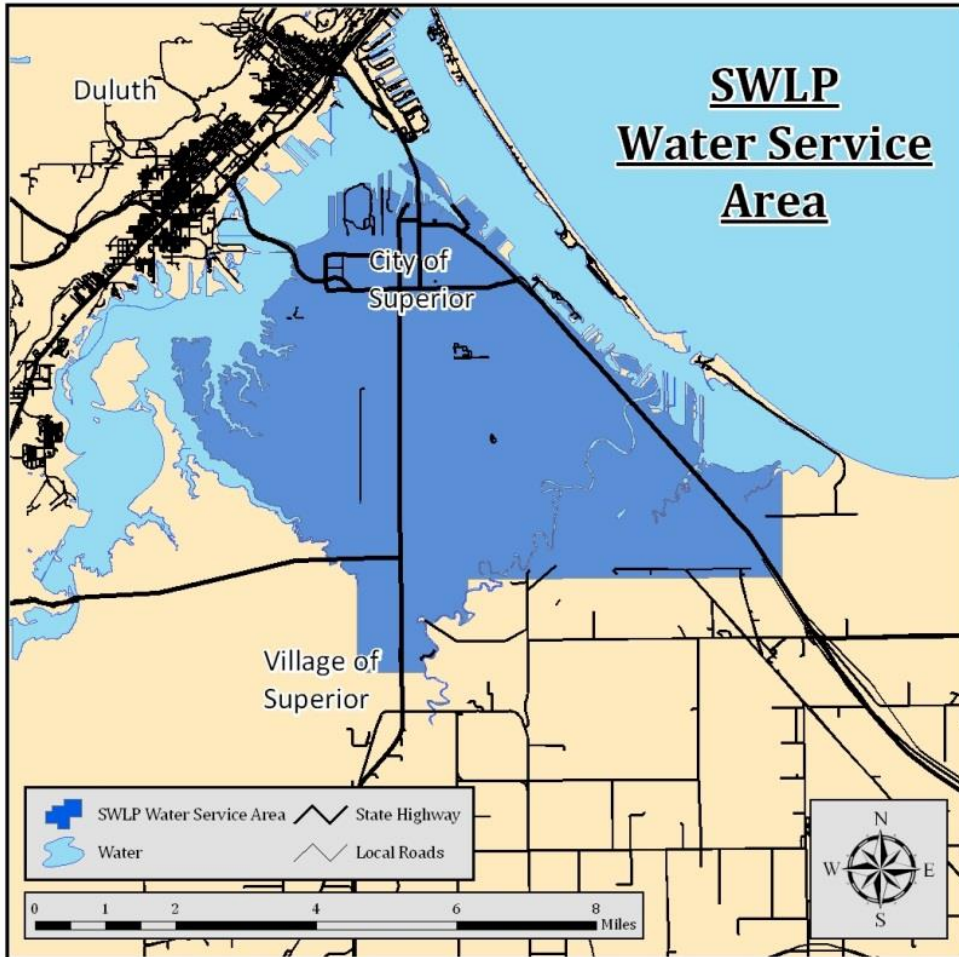


If You Strike A Gas Line:

- Shut off all equipment
- Walk away from the blowing gas area
- Call 911 to report the gas hit (1st Call)
- Call SWL&P at 715-394-2200 to report the gas hit (2nd Call)
 - Call if any contact is made with gas line.
- **DO NOT** attempt to “pinch off” or stop the flowing gas in any way
- **DO NOT** restart any equipment
- **DO NOT** return to the blowing gas area



Water System Service Territory




- City of Superior
- Village of Superior



Water System - Facts

- 144 miles of mains and services (3/4" – 24")
- Primarily in the road right-of-way
- *Typically* 5'-7' deep
- Indicated by BLUE paint markings/flags

Utility Color Code

	Electric
	Gas, Oil, Petroleum or Gaseous Materials
	Communication, Cable
	Water, Irrigation and Slurry Lines
	Sanitary Sewer Lines
	Temporary Survey Markings
	Proposed Excavation

DIGGERS HOTLINE™
Dial 811
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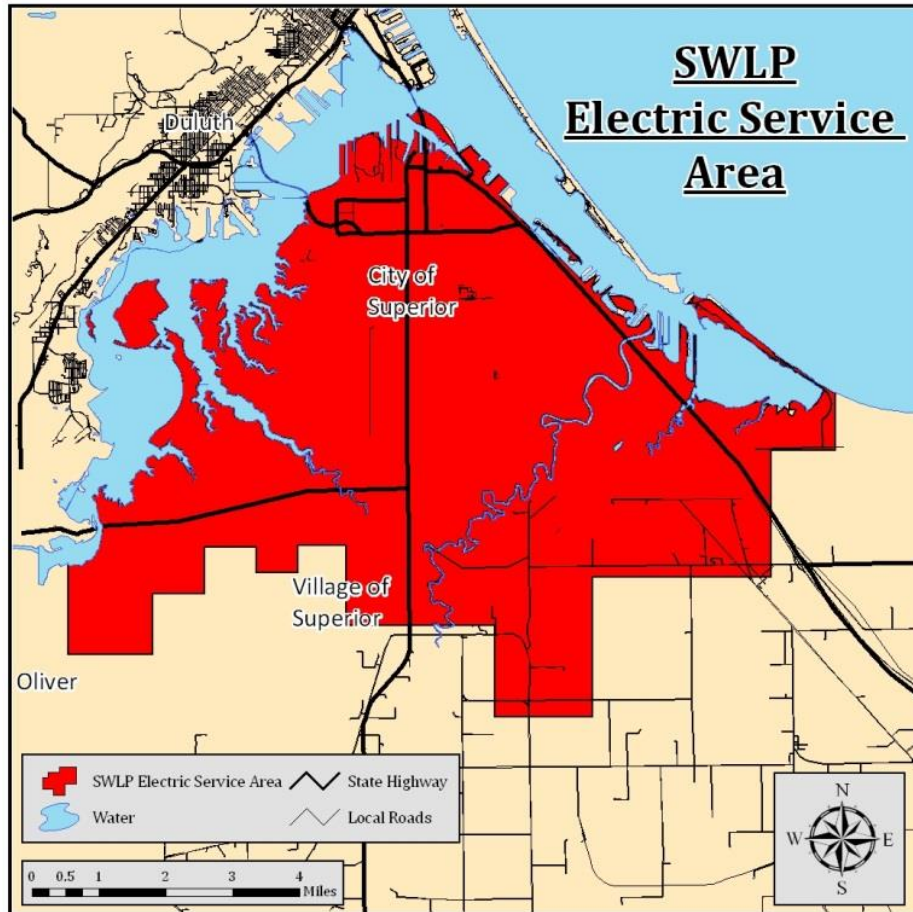
If You Strike A Water Line:

- Call SWL&P immediately at 715-394-2200 to report the incident (1st Call)
- Make sure job site and immediate area are safe
 - Contact Police Department if danger/damage to public roadways, etc. (2nd Call)



Electric Operations

Service Territory



- City of Superior
 - Village of Oliver
 - Village of Superior
 - Town of Lakeside
 - Town of Parkland
 - Town of Superior
 - Town of Frog Creek*
- *Washburn County



Electric Operations - Facts

- Underground lines
 - Primary (2,400V – 8,000V)
 - Secondary (120V – 480V)
- *Typically* 1.5' – 3' deep
- Indicated by **RED** paint markings/flags
- Overhead lines
 - 120V up to 115kV



If You Strike A Power Line:

- Call SWL&P immediately at 715-394-2200 to report the incident (1st Call)
- Make sure job site and immediate area are safe
 - Contact Police Department if there is a threat for danger to public (2nd Call)

How do people get hurt around electricity?

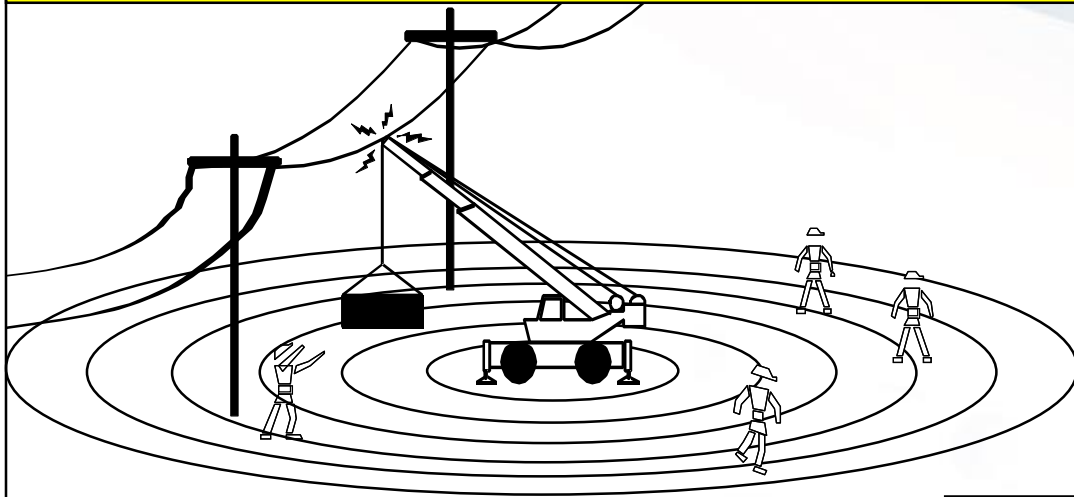
- Contact overhead lines
- Contact underground lines
- Overhead lines break energizing other things.
(Transferred touch potential)
- Overhead or Underground fault to ground (step potential)
- Induction

Potential Project Hazards – Work Near Energized Facilities

- **Competent person must accompany any “non-qualified” contractor.**
- **“Non-Qualified” personnel shall not be left alone in or in dangerous proximity to an energized facility.**



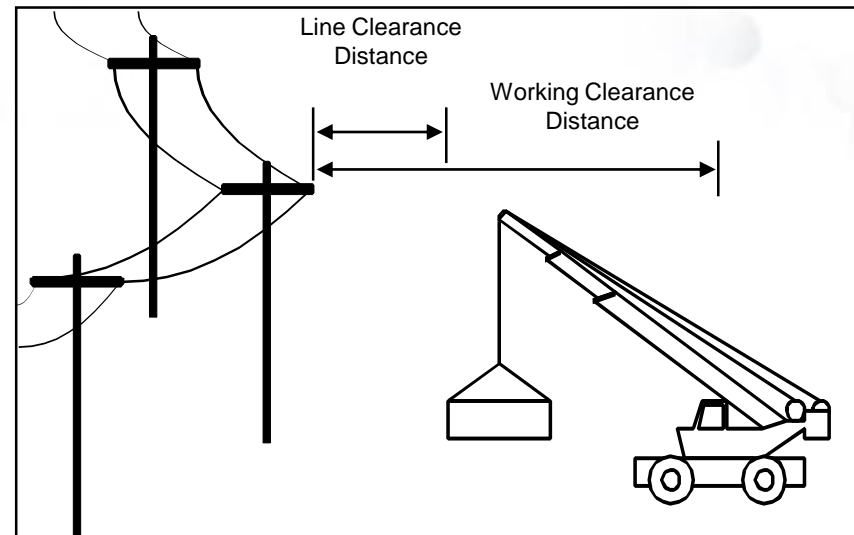
Power Lines Are Lethal



Line Clearance =

10' +

- Move equipment/activity to the safe working clearance distance from power lines.
- Check for the viability of an outage
- Install flagged warning lines to mark horizontal and vertical power line clearance distances.
- Don't store any materials under power lines.
- Use an observer.



Clearance From Energized Lines



- Anything below 50 kV is 10 feet. There is an additional 4 inches per 10 kV above 50 kV. For example the restricted zone for 115 kV is:

$$=10' + (4'' \times ((115\text{kV}-50 \text{ kV})/10\text{kV}))$$

$$=10' + (4'' \times (65 \text{ kV}/10 \text{ kV}))$$

$$=10' + 2'-2''$$

$$=12'-2''$$

If it's Not Grounded it's Not Dead!



- Unqualified electrical workers shall never touch any component of the system. Including guy-line (anchors).
- The system is considered energized until scoped and grounded from a qualified electrical worker.
- Average system voltage is 13.8KV.

Unqualified Electrical Worker

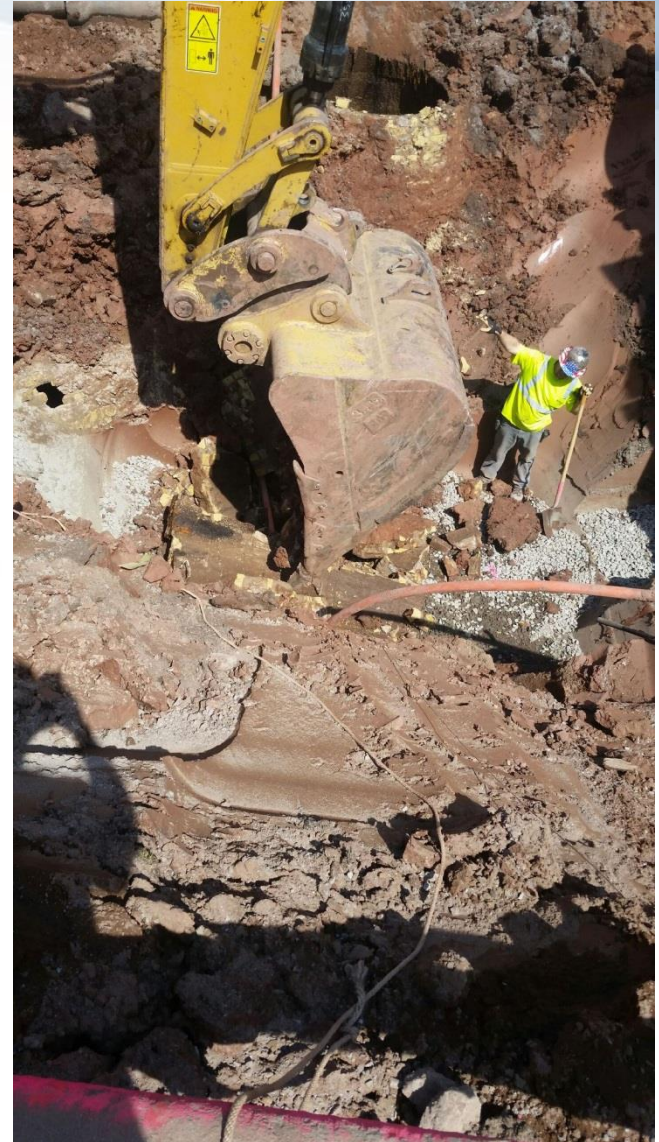


- Cover-up
- Spotters
- Physical Barriers
- Shall still maintain minimum 10 ft. clearance
- Goal is to eliminate unnecessary contact to the electrical system

Pictures/Examples

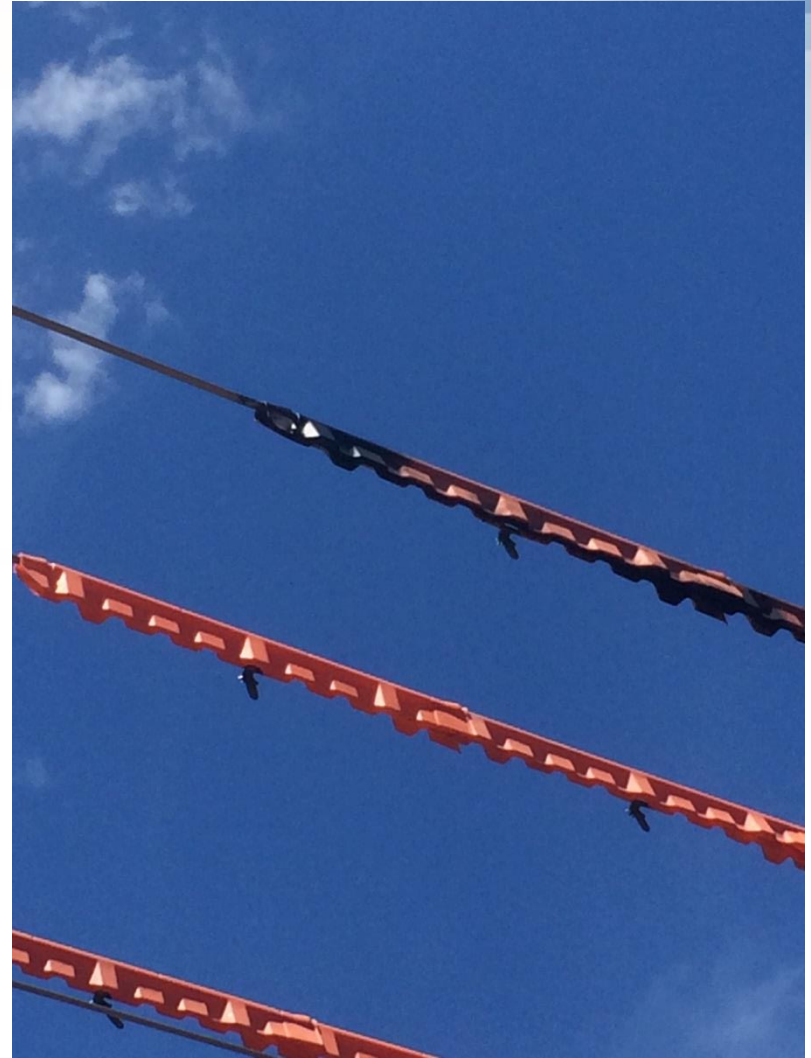
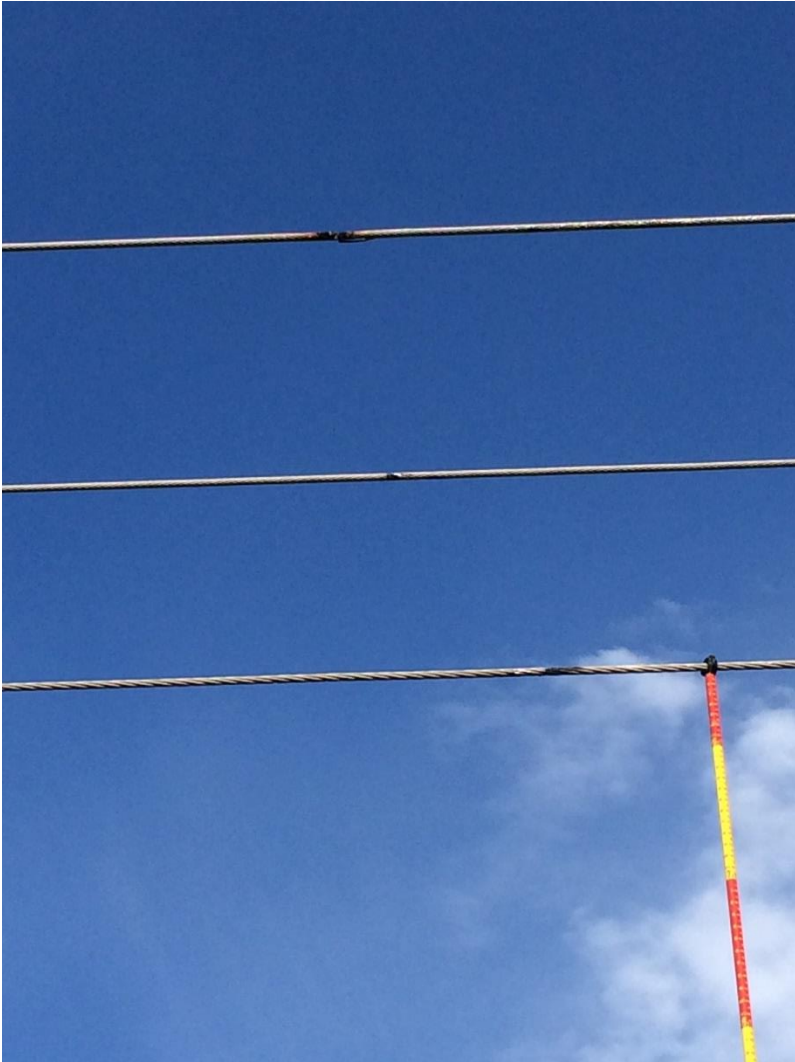
NEVER assume that there aren't
underground utilities below.













DO NOT GO NEAR A DOWNED LINE







Questions?



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Thank You!