Irrigation Pipe Work Safety Meeting Kit

What's At Stake

Thousands of gallons of water are pumped through irrigation pipes daily. Eventually, all this water starts to clog the pipe with sediment. Raising the pipe in the air may seem like an obvious way to clean out an irrigation pipe. However, a long irrigation pipe could easily become tangled in irrigation pipes power lines, and you could get an electric shock as you become the electricity's path to the ground.

What's the Danger

PRINCIPAL HAZARDS

Overhead Power Lines. Always remain aware of the location and height of overhead electrical lines in your work area, including the installation field, equipment storage, and transport areas.

Irrigation pipes are usually 30-to-40 feet long; rural overhead electric lines may be as little as 18-feet high. Try to keep pipe lengths horizontal while you are maneuvering them, so you do not lift them into a line by mistake. Store equipment and pipe at least 100 feet from power lines and stay at least 10 feet from power lines that carry up to 50,000 volts. Use a greater clearance for higher voltages. Use these same precautions whether you are installing new pipe, moving pipe, or lifting and clearing existing systems. (Note that irrigation pipes on wheels and "solid-set" (in-ground) pipes can reduce the likelihood of accidental shock by reducing the need to maneuver the pipe systems.)

Underground Utilities. Before you dig a pipe installation site, call 811 and your local utility will come out and mark the location of all of the underground utilities. Do not dig if there are no markings. When you must dig near marked utilities, use

blunt hand digging tools. Watch for hidden underground utilities—if you see wires or pipes sticking out from the ground, investigate before you dig.

Trenching. When digging trenches to install irrigation pipes, use proper trenching and shoring techniques to safeguard against collapse and engulfment. Mark trench areas clearly. Do not park vehicles near the trench sides where they may cause a collapse. Do not trench more than you can complete and backfill in a day.

Be Aware and Vigilant of surroundings and equipment. When handling irrigation pipes watch out for crush or pinch injuries. Know where your hands and fingers are when you are moving, fitting, or dismantling the pipes. Communicate with your coworkers to coordinate your movements when working as a team. Ensure that equipment loads on tractors and equipment are securely fastened before you transport them. Follow tractor safety guidelines and take care when maneuvering. Remain aware of obstacles and other workers; use a spotter when you cannot easily see to maneuver.

HOW TO PROTECT YOURSELF

PROCEDURES AND EQUIPMENT REQUIRE TRAINING

Get training on the procedures and equipment that you will use. Know the emergency procedures and first aid in case there is an accident. Wear the proper clothing to protect you from the sun, insects, as well as heat and cold stress. Sturdy work gloves and footwear will protect your hands and feet. Use good ergonomics, proper lifting techniques, rest breaks, and task rotation to protect your back and avoid strains and sprains.

PIPE WORK SAFETY PRECAUTIONS

- Store unused irrigation pipes far away from power lines or electrical equipment.
- Position irrigation pipes at least 15 feet away from power lines.
- Position the water jet streams so that there is no chance of them spraying onto power lines.

- Stay away from the piping during any lightning activity. Install lightning arresters to protect your equipment.
- If fuses continually blow or circuit breakers repeatedly trip, have a professional check the wiring.
- Always shut off and lock the master electrical control switch before servicing the machine.
- Avoid moving irrigation equipment on windy days when pipes could be blown into nearby power lines.
- If an irrigation pipe comes in contact with a power line, never try to remove it yourself.

IRRIGATION PIPE SAFETY BEST PRACTICES

- When making checks on the electrical system, please keep in mind that a possibility of electric shock does exist.
- All motor screens should be in place and checked for blockage with foreign material such as lint, dirt, or insects. Cross-ventilation of closed pumps house structures should be provided with doors or louvers.
- If belts or pulleys are exposed, they should have guards in place.
- Look up for overhead wires when moving irrigation pipe.
- Doors must have positive catches to prevent closing. Keep controls out of the sun.
- Block all electrical box unclosed openings (knockouts) to prevent rodent entry.
- Discourage children from playing or climbing around irrigation equipment.
- Stay away from the center pivot during and electric storm.
- If you suspect a short circuit due to a “tingle,” do not touch the machine again. Has it checked?
- Bury and guard all power lines around a center pivot. Mark the area with a buried line sign.
- Never service a center pivot irrigation system without shutting off and locking the master disconnect switch.
- Avoid getting any portion of your body in contact with high-pressure water streams such as the end guns on center pivots. Be careful of fast return end guns.
- Make sure the irrigation system wiring is properly grounded.

Have a qualified electrician check the pump and motor wiring before each irrigation season.

- Water and metal are ideal electrical conductors. Position irrigation pipes at least 15 feet from power lines. Keep water jet streams from spraying onto electrical lines.
- When not in use, store irrigation pipes in an open area away from power lines and other electrical equipment.
- Install lightning arresters to protect equipment and stay away from the machine during any lightning activity. The pipe pedestals in an open field make perfect lightning receptors, and the water-filled piping can carry an electrical current for long distances.
- When assembling or transporting irrigation equipment, try to keep pipes parallel to the ground and move them horizontally rather than vertically to avoid contact with overhead power lines.
- Repeated circuit breaker trips or blown fuses during operation could indicate a serious electrical hazard.
- When servicing the machine, always shut off and lock out the master electric control switch.
- When working on a tower or tower motor, turn off the tower control switch. This switch is always located on the machine’s electrical control box on top of each tower.

FINAL WORD

When moving equipment or irrigation pipes, survey your surroundings and look up and all around you for power lines that could come in contact with the equipment or pipes you’re attempting to move. Any contact with electrical lines can cause serious injury or death.