

Irrigation Safety Meeting Kit

What's At Stake

Irrigation systems move and deliver water that is vital for the survival of agricultural crops. Moving equipment, electricity, water pressure, pumping systems, and field conditions related to irrigation and agriculture require workers to follow safety protocols.

What's the Danger

IRRIGATION DEFICIENCIES/DEFECTS CAUSE HAZARDS AND HARMS

Irrigation defects may arise from a single issue or a combination of design, construction or maintenance defects. The defect may in some way lead to an accident, either through an operational problem which causes property damage or passive hazards resulting in personal injuries.

HOW TO PROTECT YOURSELF

Design – Related Deficiencies

- Failure to segregate irrigation valves based on sunshade orientation and or plant type
- Lacking proper backflow prevention system design or incorrect components
- Over-stretching a valve system leading to unbalanced precipitation rate, drought and or flooding
- Using spray or rotor heads on risers instead of pop-up heads adjacent to sidewalks, curbs, decking, trails.
- Incorrect location of RP backflow devices impeding traffic sight distance and sight line corridors
- Lack of master control, isolation or control valves to turn off the irrigation main line in an emergency
- Failure to design or specify thrust block for mainline

protection

- Failure to account for low head drainage

Construction – Related Deficiencies

- Failure to adhere to the irrigation design, plans, details and specifications
- Contractors and unlicensed gardeners designing irrigation systems without knowledge of hydraulic flows or public safety issues
- General contractors acting as design or professional consultants in making construction decisions
- Landscape contractors performing non-contract work without written authorization
- Landscape contractors inadvertently or otherwise acting as landscape architects or professional consultants, making decisions outside of their field of expertise
- Contractor cutting corners using cheaper components such as heads on risers rather than pop-up heads
- Incorrect Reduced Pressure (RP) back flow protection or no protection at all
- Incorrect trenching and backflow, using contaminated backfill, failure to properly bed pipe in a trench
- Incorrect solvent welds, wrong or missing primer and applicable PVC glue
- Failure to properly regulate the pressure in a system
- Temporary hi-line irrigation mainlines improperly supported on grade, failure to bracket and or sand bag
- Failure to install thrust blocks at angles and changes in elevation
- Setting valve boxes and subterranean vaults at incorrect finish grade
- Setting irrigation pop-up and heads-on risers at incorrect elevation or finish grade
- Failure to install check or swing valves to reduce low head drainage

Maintenance Failures

- Failure to properly inspect, clean and adjust sprinkler

heads

- Failure to inspect and regularly adjust and program the irrigation controller
- Failure to adjust irrigation heads blocked by growing plants
- Failure to adjust valve boxes and subterranean vaults as grade changes occur
- Incorrectly staking irrigation heads creating tripping hazard

Irrigation components have mechanical, hydraulic and increasingly sophisticated digital and computerized components. As with any machine or mechanical system, maintenance is required. Without regular recurring maintenance inspections and testing, accidents are unavoidable.

BEST IRRIGATION SAFETY GUIDELINES AND PRACTICES

Look for the following:

- Low tire pressure and damage.
- Signs of sprinkler blockage or breakage.
- Problems with end gun flows that maintain appropriate water pressure in the system.
- Problems with debris in systems. If necessary, flush the system to remove debris.
- Deficient levels of lubrication.
- Water or fluid leaks.
- Barriers in the field that could halt or hinder system movement.

Pay attention to potential hazards when applying lockout tagout:

- Make sure all equipment is properly wired and grounded.
- Know where power lines are located and their heights.
- Know the heights of the towers and the heights and lengths of the piping system.
- Maintain proper clearances from power lines at all times.
- When clearing pipes, keep them horizontal, don't lift them vertical where they could meet with power lines.
- Extreme weather can move your equipment and power lines, so always survey the work area after a storm.

- If power lines do meet with any part of the system, contact the power company immediately and evacuate the area.
- Keep the system's traveling path free of objects and people at all times.
- Never climb on the machine; use proper ladders for access.
- Walk behind or in the opposite direction of the system to prevent a collision.
- Know where your hands and feet are at all times to avoid caught and crush injuries near the moving equipment.
- Practice field safety when working in high temperatures outdoors
- Minimize exposure to the sun, insects, and cold.
- Be CPR and First Aid certified and know your emergency procedures.
- Use good body postures and lifting techniques to avoid strains and sprains.

FINAL WORD

The secret of the safe use of irrigation systems is directly tied to the observance of the linkage of the design, construction and maintenance of those irrigation systems.