



Electrical Safety

Electricity serves an important function on farms and ranches. It has proven to be a valuable servant to perform such tasks as lighting, heating, crop processing, and irrigation pumping, as well as many other tasks. Because it is so commonly used, we tend to take it for granted and many times fail to recognize the potential dangers that may be present with electricity. It's this common complacency that often leads to accidents related to electricity.

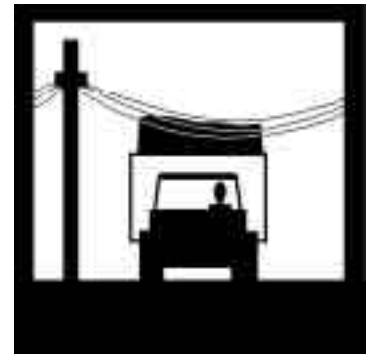
Causes of Accidents

- **Faulty wiring in buildings is a common cause of injury on farms and ranches. Often the wiring system is outdated or not kept up-to-date for it to handle current loads. Corrosive environments and rodents cause wiring to decay and create a hazardous situation.**
- **Power cords that are frayed or have wires exposed is common. Cords are exposed to heavy foot and vehicle traffic and other abrasive actions that cause wires to be frayed, thus exposing them.**
- **Faulty wiring on irrigation systems and other high voltage sites have the potential to cause serious**



accidents and electrical burns. Many sites have voltages that range from 430 or more. Corrosion and poor grounding are leading causes of injury.

- **Poorly grounded tools or tools that have shorts or other electrical malfunctions cause many electrical injuries. Often work is done in wet or dusty environments.**
- **Contact with power lines by loaded trucks, augers, irrigation pipe, and other farm equipment causes many injuries and deaths. Overhead wires are a common fixture in the farm and ranch setting and in fields. Often the location of wires overhead is not realized until it is too late.**

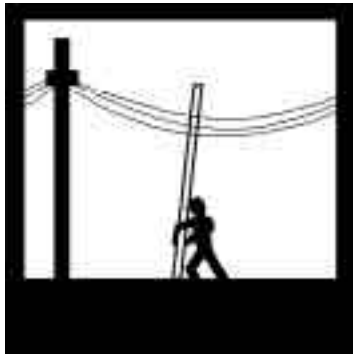


Prevention of Accidents

1. Have the wiring checked by a competent electrician. Proper grounding is important in a farm or ranch work environment. Be sure the wiring system is able to handle the loads that will be used. This includes the outlet boxes and the service entry boxes. Be sure the circuit breakers are in good shape and not corroded. All wires should have the insulation on. Check for mouse nests and damage to wires.
2. Use recommended fuses or circuit breakers for circuits. Do not overload a circuit. If the fuses or circuit breakers continue to "blow" do not replace them with larger ones. Add another circuit.
3. Protect wiring from abrasive and corrosive environments by placing it in conduit or inside of a protective shield. Keep mice out of the electrical components since mice can eat the insulation material.



4. Use explosion proof fixtures in dusty environments such as a feed grinding area.
5. Check all extension cords for damage and be sure the ground prong is attached. Use an extension cord that is the same size or larger than the cord on the tool or motor being used. Keep cords out of foot and vehicle traffic areas as the constant contact with the cords can cause abrasion and expose wiring. Also, cords can be a tripping hazard.
6. In outdoor or moist environments use a GFCI (Ground Fault Circuit Interrupter) to prevent electrical injury should a short occur in the tools being used.
7. Inspect power tools and cords often. Repair or replace defective power tools, and never use a tool that is known to have a short in it.
8. Do not use metal ladders when working around power lines.
9. Locate overhead power lines away from work areas such as around grain bins where augers will be moved from bin to bin. Consider placing power lines underground that pose potential problems such as in grain storage and other crop storage areas. If a live power line falls on a metal grain bin the whole bin can be electrified creating a hazard to anyone who comes in contact with it.
10. Make a map of all underground power lines and make sure your workers have access to this information.
11. Prune trees away from power lines. The power company may be able to assist you with this.
12. Before opening a high voltage power panel, such as an irrigation system panel to inspect it or to turn



- on or off the current, always brush the back of the hand against the panel. This will allow you to free yourself from the panel if electrified. If you grasp it and the panel is electrified, then it is possible the current flowing through you will not allow you to let go of the panel.
13. Have a competent electrician check the wiring for irrigation pumps and motors before each irrigation season. Be sure that it is properly grounded.
 14. Locate irrigation pipe storage areas away from overhead power lines. Before moving irrigation pipe, always look up.
 15. Be aware of power lines during harvesting or haying operations as raised equipment or loaders can come into contact with power lines. Never place bale stacks under power lines.
 16. Be aware of clearance of tall equipment such as combines, cultivators, and raised grain augers from power lines. Have an observer watch for clearance when moving under low overhead lines to prevent contact with the wires.
 17. Always turn off the electrical power and lock out power boxes when doing repairs or maintenance on an electrically powered device to prevent another person from turning it on and causing an accident.
 18. Before using standby generators for emergency power install a transfer switch to prevent power from entering the power utility lines, which will present a hazard to linemen working on the lines. This switch also protects your generator.
 19. Before digging with a backhoe or shovel know where the underground power lines are located.





Prevention of Further Injury or Death

1. Make sure family members and workers have training in CPR and First Aid.
2. All family members and workers need to know where the main electrical shut off switch is located.
3. Have fire extinguishers on hand that will handle electrical fires. Use a general purpose dry chemical fire extinguisher on electrical fires. **Never use water.**



4. If another person is electrocuted by a power line or tool or appliance, do not remove the person until the power is turned off or wire removed. Do not remove a live wire with a dry board as paint can conduct electricity. Call the power company. They have the equipment to do it safely.



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