AgSafe
COALITION FOR HEALTH AND SAFETY IN AGRICULTURE
COALICION PARA LA SALUD Y LA SEGURIDAD AGRICOLA

Working Safely With and Around Electricity: Script

Agsafe, Coalition for Health and Safety in Agriculture[1]

The following safety module is intended to be used as a refresher safety awareness session and is in no way to be used as a substitute for job training or proper equipment use.

The safety modules may be used by anyone with the understanding that credit be given to AgSafe.

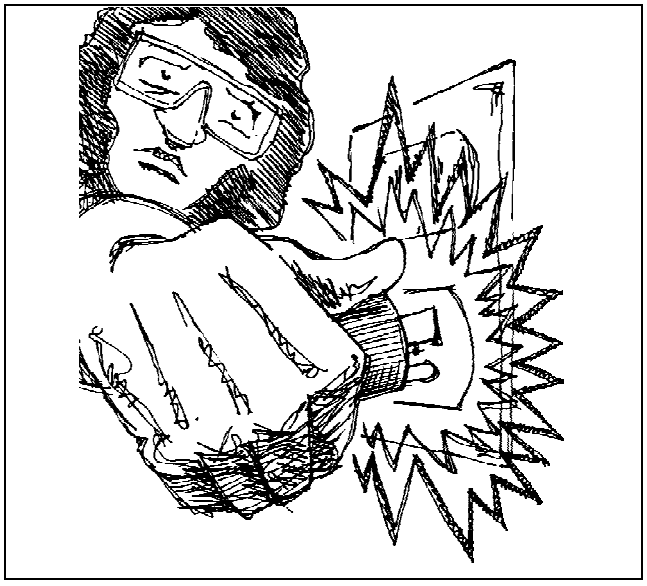

Figure 1. Respect the power of electricity

RESPECT THE POWER OF ELECTRICITY

Electricity is a strong invisible force that gives power to machinery, lights, heaters, air conditioners, and many other forms of equipment that we have come to depend upon. However, electricity can be very dangerous, too. Accidental contact with electrical currents can cause injury, fire, extensive damage and even death. It is very important to remember that working with and around electricity requires your full attention and respect. (See Figure 1.)

Figure 2. Inform your supervisor of faulty equipment

INFORM YOUR SUPERVISOR OF FAULTY EQUIPMENT

Contact with electricity does not have to happen if you follow a few simple guidelines. It is very important that you immediately inform your supervisor of any faulty equipment so it can get repaired or replaced. (See Figure 2.) Don't attempt to repair the tool yourself. Lock out the equipment or, at the very least, tag it so others are aware that the equipment is damaged.

1. 140 Warren Hall, University of California, Berkeley, CA 94720.

WEAR PROTECTIVE CLOTHING

You should make it part of your routine to wear rubber gloves and rubber-soled shoes or boots, especially if you are working around electricity in a damp environment. (See Figure 3.) Of course, you know that water and electricity do not mix, but how often do you think about other liquids, such as grease, oil or solvents? Operating a drill with sweaty hands can also be a potential for electrical shock. However, do not make the mistake of believing that, regardless of your action, protective articles alone will protect you. Remember to do your best to avoid making any contact with electricity.

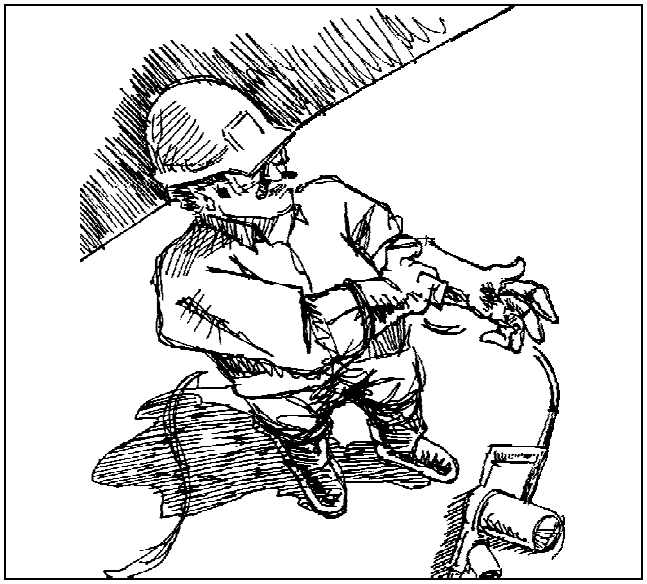

Figure 3. Wear protective clothing

REGULARLY INSPECT YOUR ELECTRICAL TOOLS

Inspect your electrical tools on a regular basis (see Figure 4), including the large tools such as table saws, drill presses and bench grinders. Test your equipment first before starting to work. If any tool gives you a slight shock or smokes and sparks when the power is turned on, don't use it, but notify your supervisor immediately.

INSPECT THE POWER CORD

Check the insulation around the power cord to make sure it is in good condition. (See Figure 5.) You should not see any exposed wires or frayed ends. Power cords in poor condition should be replaced, never taped or spliced. Check the plug at the end of the cord to make sure the prongs are secure in the plug and none are missing. If one of the prongs is missing, do not use the

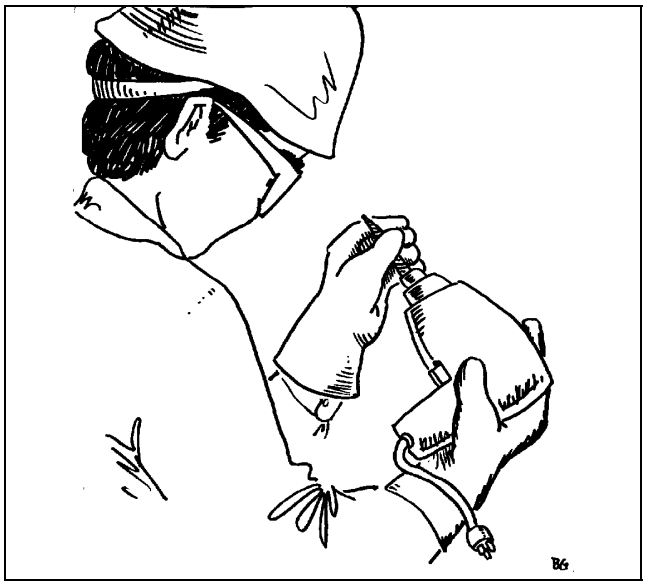

Figure 4. Regularly inspect your electrical tools

tool. If you notice one of the tongs on the plug is slightly larger than the other, do not attempt to trim the tong down to match the smaller one. These tongs are polarized to prevent you from shock. When you unplug cords from the outlet, remember to pull on the plug and not the cord.

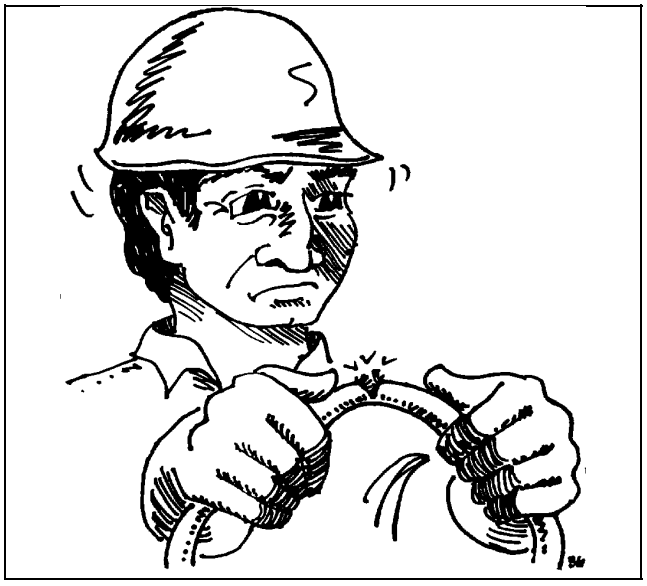

Figure 5. Inspect the power cord

MAKE SURE ELECTRICAL EQUIPMENT IS PROPERLY GROUNDED

Properly grounded electrical equipment can offer you protection if the equipment should malfunction electrically. If your electric tool states that it's doubly insulated on the manufacturer's tag, this means there is insulation on the inside of the tool to protect you from

shock. This type of tool will only have a two prong plug. If the tool doesn't state that it is doubly insulated, then you must have a third prong on the plug. (See Figure 6.) This third prong, or ground prong, plugs your tool into ground or earth so that in the event of a malfunction, the electricity will go through this ground prong to earth and bypass your body. If the prong is broken off, you have no protection and all the electricity will go through your body. A Ground Fault Circuit Interrupter should be used where there is a chance you could make contact with the moisture on the ground, such as working outside.

Figure 6. Make sure electrical equipment is properly grounded

WATCH OUT FOR OVERHEAD POWER LINES

It is very important to keep your distance from overhead power lines. (See Figure 7.) Each year, construction and farm workers are injured or killed because they have accidentally made contact with the high voltage lines that pass overhead. To prevent this from happening to you, *preplan your job*. Go out to the area you plan to move large equipment into, stack bales within, or where irrigation pipe will be laid, and look around for overhead wires and electric poles. Then plan your job around them. Remember, high voltage power lines are not insulated. Also, be aware that there are laws that prohibit any work within six feet of lines that carry between 600 and 50,000 volts, and require a minimum distance of 10 feet from these lines when operating boom-type lifting equipment.

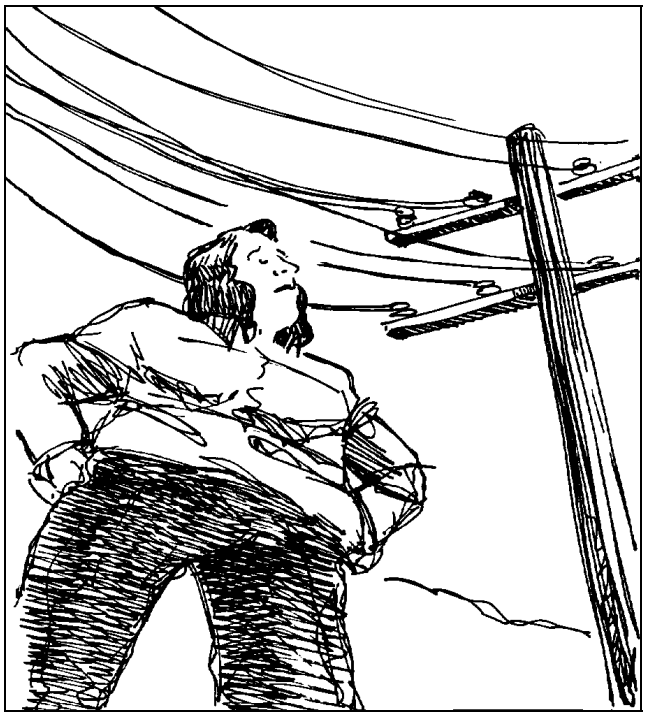

Figure 7. Watch out for overhead power lines

DO NOT MISUSE EXTENSION CORDS

Extension cords appear harmless, but they can do quite a bit of damage if they are misused. No extension cord can be kinked, tied in a knot, crushed, cut, or bent and still insulate the electrical current safely. An extension cord that is misused in this manner may cause a short circuit, fire or even electrical shock. Don't use extension cords in areas that receive a lot of traffic because not only will it cause someone to trip, but constant traffic will wear out the insulating rubber cover. If you have no choice and must use cords in high traffic areas, make sure the cords are taped securely to the flooring (see Figure 8) or are hanging high overhead. Extension cords are to be used temporarily and never as a permanent source of power to equipment.

NEVER THROW WATER ON AN ELECTRICAL FIRE

As mentioned, water and electricity do not mix. In fact, water is an excellent conductor of electricity, and if water is thrown on an electrical fire, it will only spread the fire. Instead, use a chemical fire extinguisher. (See Figure 9.) Make sure you know how to operate a chemical fire extinguisher and where the nearest one is in case of emergency. If you have questions or have difficulty locating an extinguisher, ask your supervisor for help.

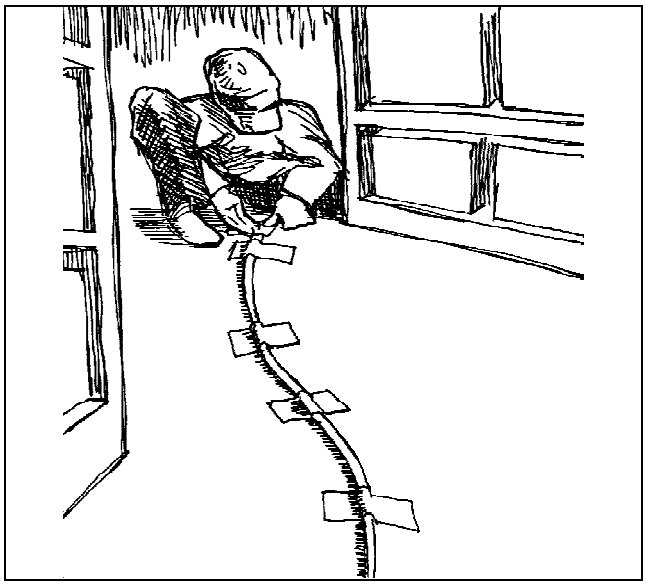

Figure 8. If an extension cord must be used on the floor in a traffic area, tape it down securely

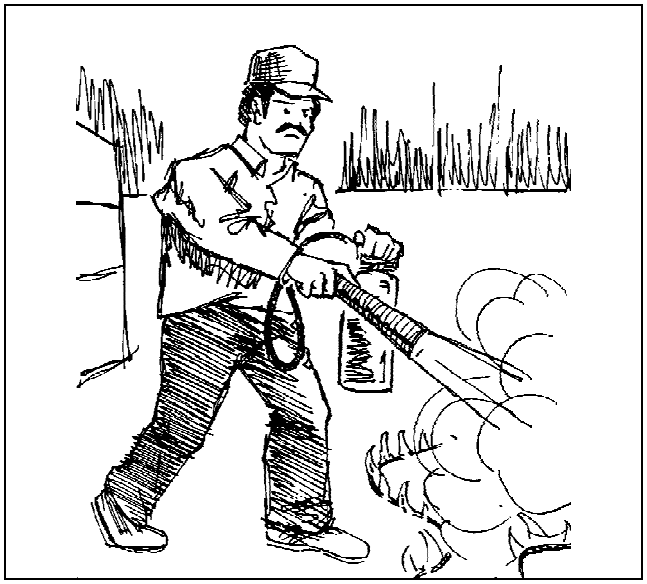

Figure 9. Use a chemical extinguisher, never water, on an electrical fire

PRACTICE GOOD HOUSEKEEPING

Electrical safety involves more than just ensuring that electrical equipment is in good working order, it also involves ensuring that you can get to the main power source as quickly as possible without climbing over obstructions in the event of an emergency. Keep the aisles and walkways clean and clear of garbage, and make sure all flammable liquid, such as gases or chemicals, is stored away from the area where any electric tool will be operated. (See Figure 10.) Many electric tools produce sparks, which could ignite the flammable liquid's fumes and cause extensive damage.

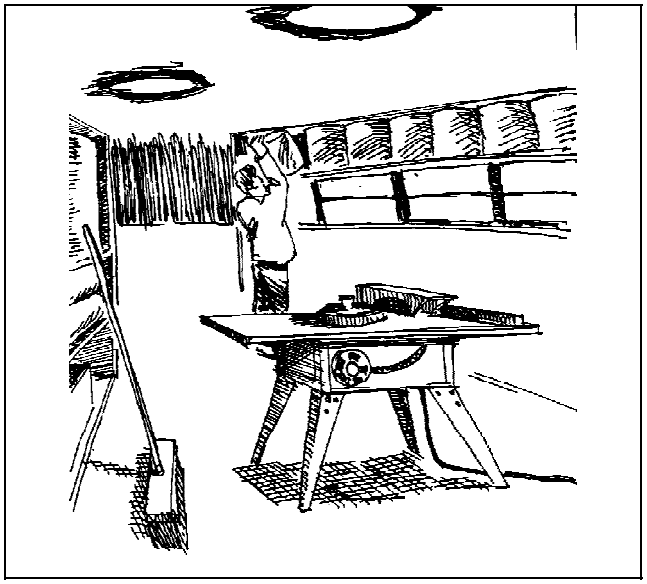

Figure 10. Practice good housekeeping