

volts) lamps and tools powered by an isolation transformer with a grounded static shield between the windings.

Personal Operating Safety Precautions

Proper insulation, grounding, isolation, and lockouts, plus the use of low voltage and ground fault interrupters can make your shop, laboratory, or transmitter room a much safer place in which to work. However, these precautions may be inadequate to keep you from being shocked, if you have poor or careless work procedures.

Here are some basic procedures to follow in the shop or lab:

1. Keep one hand in your pocket when working on energized circuits.
2. If you can't keep your hand in your pocket, do not touch any metal object with your free hand while holding an electrical tool in the other hand.
3. Don't depend on switches to kill a circuit; pull the plug from the outlet.
4. If you are working on high-voltage circuits, have a buddy standing by to help you in case of shock. Just anybody will not do; your observer must know how to kill the circuit to get you loose and how to give you mouth-to-mouth resuscitation and closed-chest heart massage.
5. Do not wear loose clothing, metallic frame eyeglasses, rings, watches, or other jewelry if you are near energized circuits.
6. Do not use an ordinary lamp as an extension trouble light.
7. If directions or instructions are available, follow them. The guy who wrote the book may know more about the hazards involved than you.
8. When you're mentally or physically fatigued, avoid work on energized circuits.
9. To measure high voltages, deenergize the equipment, discharge appropriate capacitors, attach the meter leads, step back, energize the equipment, and make your readings. Don't go probing with a test lead in your hand.
10. Try to make safety protection equipment fail-safe.
11. Never assume that a circuit is dead. Check it first.
12. Do not rely solely on interlocks unless you are certain that they have disconnected the circuit.

13. Have sufficient illumination to see the smallest parts of the equipment you're working on.
14. Discharge all items that can retain a charge.
15. Short out interlocks at your own risk!
16. Study equipment schematic and instruction manual before you start work.
17. If there is any possibility that the equipment chassis may be hot, connect it to an isolation transformer instead of the usual power outlet.
18. Do not draw arcs either intentionally or accidentally. Technicians on missile work have been nearly blinded by low voltage, high current arcs caused by accidental shorts. Such arcs can also be hazardous in flammable atmospheres:

Special Procedures

High Voltage Wire On Car⁵

Bear in mind if you touch the car or any of its occupants, you will suffer a serious accident or even death even though the occupants are safe in the car. If an occupant of the car, in attempting to get out, should touch the ground and the car simultaneously, he will probably be killed. Call the power company as soon as possible.

Remain calm and speak calmly.

Don't show excitement or undue concern. People in car may panic.

Stay at least 10 feet from car at all times.

Don't touch car in contact with a wire or the wire itself with anything held by you.

Tell occupants to stay in car.

Don't try to judge whether wire is live.

Tell occupants to drive car from contact with wire if it will operate.

Don't assume that covered wire is insulated. IT IS NOT. Assume any downed wire is dangerous and stay away.

If the car cannot move under its own power and if it is necessary that the occupants leave or be removed from the car, push it from contact with the wire with another car or truck.

If you use a car or truck to push car in contact with wire, remember the pushing vehicle will be energized upon contact with car with wire

⁵From booklet, "Partnership in Public Safety." Reprinted by permission of the Long Island Lighting Co., Mineola, N.Y.