West Virginia University

ENVIRONMENTAL HEALTH & SAFETY

Basic Electrical Safety

Basic Electrical Information:

- Electricity naturally seeks the path of least resistance to the ground.
- If your body happens to be in the path of least resistance due to a shorted wire/receptacle or malfunctioning power tool or appliance, the electricity will pass through you and into the ground unless you are standing on a non-conductive surface.
- You will experience a shock as the electricity passes from you to the ground.
- An electrical path of least resistance that passes through your vital organs can result in a serious injury.

Basic Electrical Safety Practices:

- Be aware of the electrical hazards present in your work area.
- Notify supervisor and remove frayed, defective, or damaged power cords/plugs, receptacles, switches, cover plates, appliances, and power tools from service by attaching a red tag that states "OUT OF SERVICE." Complete the red tag with appropriate information.
- Never alter a plug by removing, bending, or twisting the prongs or blades.
- Insert plugs into receptacles with similar prong or blade patterns.
- Use a grounded three-prong adapter to connect a three-prong plug to a two-prong receptacle.
- Reduce the load by disconnecting appliances or power tools from the circuit if a circuit appears to be overloaded. Flickering/dimming lights, tripped circuit breakers, blown fuses, and warm receptacles or electric cords are signs of potentially overloaded circuits.
- Never exceed more than 80% of a load which it is rated unless the breaker is labeled otherwise (i.e. the total current draw on a 20-amp circuit shouldn't exceed 16 amps).
- Never touch energized power tools or appliances that are wet or lying in water. De-energize wet tools or appliances before touching.
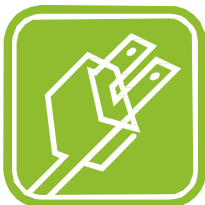
- Grip the plug when disconnecting equipment. Do not yank on power cords to disconnect equipment.
- Never replace a correctly-sized fuse with a larger-sized fuse.
- Use a Ground Fault Circuit Interrupter (GFCI) whenever electric and water sources are within six (6) feet of each other.

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