

**ELECTRONICS REPAIRER//SR. ELECTRONICS REPAIRER**

Ref. Code: E-ER-2

REPAIRING AND REPLACING OVERHEAD AND UNDERGROUND DISTRIBUTION LINES		
Activity	Hazard Identification	Required Precautions
1. Driving to and from work site.	1. Motor vehicle accident; striking pedestrians, bicyclists, or individuals using rollerblades.	1. Wear prescription lenses, if required, and seatbelt. Verify that all equipment on vehicle is secured properly. Stay alert for pedestrians, bicyclists, and individuals using rollerblades.
2. Using stepladder.	2. Ladder collapsing; slipping/falling from ladder.	2. Inspect ladder before use. Use ladder of proper height. Make sure ladder is properly assembled and locked and standing on level ground. Do not exceed weight limit for ladder. Do not stand on top of ladder or on top rung. Have coworker hold ladder.
3. Using extension ladder.	3. Ladder falling; slipping/falling from ladder.	3. Use bucket truck if possible. Inspect ladder before use. Verify that ladder is properly assembled and that it is securely positioned on level ground. Use 1'-4' rule. Use OSHA decal to verify that ladder is in the proper position.
4. Using small bucket truck.	4a. Electric shock; electrocution.	4a. Stay clear of power lines, lights, buildings, and tree branches. When working on high-voltage, wear appropriate gloves, sleeve protectors and a long-sleeve shirt or coveralls.
	4b. Falling out of the bucket.	4b. Wear safety belt. Do not overextend to work as bucket might tip. Do not exceed weight limit for bucket.
	4c. Tripping/falling when getting into and out of bucket.	4c. Use grip tape on platform to provide secure footing. In winter, keep platform clear of ice.

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	4d. Truck tipping over.	4d. Do not park truck on steep inclines.
	4e. Truck rolling away.	4e. Verify that brakes are on and wheels are chocked.
5. Using large bucket truck.	5a. Electric shock; electrocution.	5a. Stay clear of power lines and of lights on sides of buildings. Have someone stay on the ground to watch for hazards.
	5b. Falling out of bucket.	5b. Verify that boom operator is certified. Use outriggers to level truck. Wear safety belt and lifeline. Do not exceed weight limit of 500 lbs. in bucket.
	5c. Running into obstacles such as tree branches, power lines, etc.	5c. Have grounds crew remove any tree branches that present hazards. Have someone stay on the ground to watch for hazards.
6. Working in high-voltage switch gear rooms.	6a. Electrocution.	6a. Use tag out and lock out procedures to turn off electricity. Use hot sticks and growlers to verify that electricity is off. If working on something live, wear insulated gloves. Do not wear keys, rings, watches, or other jewelry.
	6b. Heat exhaustion.	6b. Ventilate room by leaving door open and using fans. Take frequent breaks in cooler area. Drink plenty of fluids.
	6c. Tripping over wires, rods, or door ledges.	6c. Keep tools and wires organized and out of work area. Walk carefully, watching for hazards.
	6d. Slipping on wet or oily floors.	6d. Mop up any oil or water on the floor.

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7. Lifting heavy and awkward equipment.	7. Back strain; overexertion.	7. Know your weight-lifting capacity and get help if needed. Lift using leg muscles. Keep back straight. Use mechanical lifting equipment. For very heavy or awkward objects, always have at least two people lifting.
8. Using power tools such as drills, generators, sawzalls, hot box.	8a. Electric shock; electrocution.	8a. Inspect cord before use. Keep power cord away from work area. Plug tools into GFCI-protected outlets. Do not use electric tools if work area is wet.
	8b. Tripping over or cutting power cord.	8b. Keep power cord away from work area.
	8c. Injury from flying bits of material.	8c. Wear safety glasses, and optionally a dust mask, gloves, long-sleeve shirt and/or coveralls.
	8d. Drill or saw catching; drill bit breaking; severe lacerations; dismemberment.	8d. Keep tools in good condition. Inspect tools before use. Verify that guards work properly. Do not put hands near blades. When using tools, make sure you have a good center of gravity and are properly balanced. Hold tools securely with two hands to maintain control.
	8e. Burning self severely on coil or hot pipe when using hot box to bend pipe.	8e. Wear gloves. Do not touch coil.
9. Using tigger.	9a. Getting caught in pulley.	9a. Do not wear loose clothing, jewelry, or keys. Wear gloves.
	9b. Wire snapping and striking worker.	9b. Inspect wire before use and replace if necessary. Wear safety glasses.
10. Using hand tools such as wire cutters, crimps, socket set, screwdrivers, wrenches, prybars, and crowbars.	10a. Electric shock; electrocution.	10a. Make sure insulation on tools is in good condition.

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	10b. Cuts, pinches, smashes, punctures, severing of fingers.	10b. Keep tools in good condition. Inspect tools before use. Ear safety glasses. Work away from yourself. Use normal caution required for all hand tools.
11. Working in poorly lighted areas when electricity has been turned off.	11a. Dark work area.	11a. Set up portable lighting plugged into generators outside building.
	11b. Tripping over power cord.	11b. Keep power cord away from work area.
12. Working in manholes or other confined spaces.	12a. Serious illness due to lack of oxygen or exposure to methane gas.	12a. Before working in confined area, verify that it is safe by monitoring air (get confined space permit as required). While working, always ventilate area using fan. In vertical tunnels, always use tripod and harness in case worker becomes ill and must be pulled up. Always have at least one person outside confined area to monitor safety of those working inside.
	12b. Slipping from ladder.	12b. Repair ladder rungs when necessary. Wear rubber boots. Climb slowly and carefully to maintain footing.
	12c. Dark work area.	12c. Replace burned out bulbs. Use portable lighting or droplights, plugged into GFCI-protected outlets, as auxiliary lighting.
	12d. Electrocutation.	12d. Pump water out of manhole before entering. Turn off electricity before entering manhole. Use hot sticks and growlers to verify electricity is off. Wear insulated gloves.
	12e. Working for long periods of time in cramped position can lead to backache or neck ache.	12e. Leave confined area frequently to stretch out.

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13. Working in area of pedestrian traffic.	13. Pedestrians knocking over ladders or lights or bumping into worker; pedestrians getting hit with equipment or falling tools, etc.	13. Secure area using cones and caution tape before beginning work. Use safety lights.
14. Working in area of vehicular/pedestrian traffic.	14. Worker, ladder, or vehicles being struck by motor vehicle.	14. Secure area using cones and caution tape before beginning work. If possible, block off work area using vehicles. Turn on safety lights.
15. Working in dirty, dusty areas.	15. Inhalation of dust.	15. Wear dust mask. In confined spaces, wear respirator. Ventilate if possible.
16. Working in mechanical room.	16a. Getting burned by steam, hot water, or hot oil.	16a. Wear proper protective clothing: safety glasses, and optionally gloves, long-sleeve shirt and/or coveralls. Be aware of your surroundings and of possible leaks.
	16b. Electric shock; electrocution.	16b. Use GFCI protectors.
	16c. Slipping on water or oil on floor.	16c. Clean up any standing water or oil.
	16d. Excessively hot temperatures; heat exhaustion.	16d. Use a fan, plugged into GFCI-protected outlet, to ventilate work area. Take frequent breaks. Drink plenty of fluids to avoid dehydration. Maintain radio contact with others.
	16e. Loss of hearing.	16e. Wear ear plugs or ear muffs.
	16f. Tripping.	16f. Survey work area for hazards. Walk carefully.
	16g. Inhalation of dust.	16g. Wear dust mask.
17. Working near steam and hot water pipes.	17a. Hitting head on pipes.	17a. Be aware of your surroundings. Always look before moving.
	17b. Getting burned by touching up against hot pipes.	17b. Be aware of where hot pipes are. Optionally, wear long-sleeve shirt and/or coveralls.

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18. Using propane torch.	18a. Getting burned.	18a. Wear safety glasses and optionally long-sleeve shirt and/or coveralls.
	18b. Starting a fire.	18b. Do not use torch near flammable objects. Have a fire extinguisher nearby and have a person stand by as firewatch.
	18c. Burns from dripping rubber or plastic.	18c. Do not overheat wire.
19. Running generator.	19a. Getting burned if radiator overheats and shoots hot water.	19a. Be aware of faulty equipment. Optionally, wear long sleeve shirt and/or coveralls, and leather or cotton gloves.
	19b. Exhaust burns.	19b. Avoid contact with engine. Optionally, wear long-sleeve shirt and/or coveralls, and leather or cotton gloves.
	19c. Getting caught in fan or belts.	19c. Do not wear loose clothing, jewelry, or keys. Keep away from moving parts.
20. Digging with shovel and pick for repair or new installation.	20. Back strain; overexertion.	20. Work safely. Take breaks as needed.
21. Lifting manhole covers, pumps, and generators.	21a. Back strain; overexertion.	21a. Know your weight-lifting capacity and get help if needed. Lift using leg muscles. Keep back straight. Use mechanical lifting equipment. Always have more than one person lift manhole cover or other awkward, heavy objects.
	21b. Dropping manhole cover on fingers or foot.	21b. Have at least two people lift cover. Be cautious.
	21c. Dropping manhole cover into manhole onto live wires.	21c. Have at least two people lift cover. With square covers, three people are required. Take your time and use the proper tools: crowbars, prybars, hooks, etc.
	21d. Slipping and falling in muddy areas.	21d. Walk cautiously. Wear shoes with good traction.

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	21e. Electrocutation from dropping submersible pump into manhole.	21e. Handle pump carefully to avoid dropping it onto wires.
22. Working outdoors in sunny and/or hot weather.	22a. Heat exhaustion; sunstroke.	22a. Work outside in cooler part of day—morning or early evening. Wear a hat. Drink plenty of water. Take frequent breaks.
	22b. Sunburn; skin cancer.	22b. Use sunscreen and wear a hat.
23. Working outdoors in very cold temperatures.	23. Frostbite.	23. Wear proper clothing for low temperatures: insulated coveralls, gloves, and hat.