

## MAINTENANCE MECHANIC RCF

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. Tie safety rope to hold ladder to roof. Use 1'-4' rule. Use OSHA decal to verify that ladder is in the proper position.
4. Working in mechanical room.	4a. Getting burned by steam, hot pipes, hot water, or hot oil.	4a. Wear safety glasses, and optionally, ear protection, long-sleeve shirt and/or coveralls. Be aware of your surroundings and of possible leaks.
	4b. Electric shock; electrocution.	4b. Always use GFCI protectors.
	4c. Explosion from leaking gas.	4c. Be aware of odors that could signify leaks. If you smell gas or oil (which could signify a refrigeration leak), evacuate the area and alert the dispatcher.
	4d. Slipping on water or oil on floor.	4d. Clean up any standing water or oil. Identify leak and repair it if possible.

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	4e. Excessively hot temperatures; heat exhaustion.	4e. Take frequent breaks in cooler areas. Drink plenty of water.
	4f. Loss of hearing due to loud noise.	4f. Wear ear plugs or ear muffs.
	4g. Tripping; getting hurt on materials being stored in mechanical room.	4g. Keep tools together to avoid tripping over them. Survey work area for hazards. Walk carefully.
	4h. Inhalation of dust.	4h. Wear a dust mask.
	4i. Working around moving equipment; losing balance and falling into moving equipment; getting caught in equipment.	4i. Shut off equipment around work area whenever possible. If you cannot shut off equipment, always have a coworker nearby in case help is needed. Do not wear loose clothing, jewelry, or keys. Be aware of your surroundings and maintain an adequate distance from moving equipment. Work in a stable position to avoid losing your balance.
5. Climbing over, under, or on top of equipment to access work area.	5. Hitting head on pipes; falling.	5. Know what is around you before moving. Climb slowly and carefully to avoid slipping or falling.
6. Repairing and replacing pneumatic parts.	6a. Part shooting off and striking worker.	6a. Put restrictive strap on part to prevent it from shooting out if it should become loose. Wear safety glasses.
	6b. Getting sprayed by hot or cold water, hot steam, or refrigerant.	6b. Relieve pressure from part before beginning work by valving off area. Open valve slowly to release pressure slowly. Wear safety glasses.
7. Repairing and replacing electrical motor starts and control solenoids.	7. Electric shock; electrocution.	7. Turn off breaker before beginning work. Test with a meter to verify power is off. Lock out or tag out to ensure power is not inadvertently turned on.
8. Installing compressors.	8a. Lifting heavy equipment can lead to back strain or overexertion.	8a. Know your weight-lifting capacity and get help if needed. Lift using leg muscles. Keep back straight. Use mechanical lifting equipment.

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	8b. Dropping equipment.	8b. Get help lifting heavy, awkward equipment if needed.
9. Maintaining oil levels; checking equipment; performing diagnostic.	9a. Working around moving parts; losing balance and falling into moving equipment; getting caught in equipment.	9a. Shut off equipment around work area whenever possible. If you cannot shut off equipment, always have a coworker nearby in case help is needed. Do not wear loose clothing, jewelry, or keys. Be aware of your surroundings and maintain an adequate distance from moving equipment. Work in a stable position to avoid losing your balance.
	9b. Burns and lacerations from high-pressure steam leaks.	9b. Check pressure gauges. If there is a leak, valve off the area. Open valve slowly to release pressure slowly.
	9c. Cuts from sharp edges on equipment; hitting head; abrasions to knees.	9c. Wear protective equipment, especially in crawl spaces: hard hat, knee pads, safety glasses.
	9d. Getting sprayed by hot oil.	9d. Turn off equipment before checking or adding oil.
10. Using power tools such as drills and saws.	10a. Electric shock; electrocution.	10a. 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.
	10b. Tripping over or cutting power cord.	10b. Keep power cord away from work area.
	10c. Injury from flying bits of material.	10c. Wear safety glasses, and optionally a dust mask, gloves, long-sleeve shirt and/or coveralls.
	10d. Drill or saw catching; drill bit breaking; severe lacerations; dismemberment.	10d. 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.
	10e. Getting thrown off ladder if tool gets stuck in equipment.	10e. Make sure drill bits and saw blades are sharp. Do not work too quickly.

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11. Using hand tools.	11. Cuts, pinches, smashes, punctures, severing of fingers.	11. Keep tools in good condition. Inspect tools before use. Ear safety glasses. Work away from yourself. Use normal caution required for all hand tools.
12. Storing or transporting compressed gas cylinders and oxygen/acetylene torch.	12a. Explosion of compressed gas.	12a. Do not allow cylinder valves or regulator assemblies to come into contact with grease, oil, or lubricants. Wear proper eye protection.
	12b. Rupture of cylinder if valve breaks off.	12b. Always install protective valve cover. Always secure cylinder to a stand or a wall.
13. Soldering using acetylene torch.	13a. Regulator diaphragm rupturing when torch is turned on.	13a. Turn regulator adjusting screw counterclockwise to disengage plunger before turning on cylinder.
	13b. Acetylene explosion.	13b. Stand acetylene tank vertically before using.
	13c. Torch explosion.	13c. Install spark arrestors on torch and regulators.
	13d. Burning self.	13d. Wear gloves, overalls, and leather chaps. Always burn away from yourself.
	13e. Starting a fire.	13e. Always keep fire extinguisher nearby and have a person stand by as a firewatch. Must have a burning permit.
	13f. Burns from metal dripping on self.	13f. Do not reach to burn; always work level with torch.
	13g. Inhalation of fumes.	13g. Work in a well-ventilated area. Use exhaust fans and tubes for ventilation.
	13h. Flash burn to eyes.	13h. Wear burning goggles to protect eyes.
	13i. Buildup of acetylene from leaks.	13i. Check hose and connections for leaks and damage before using.

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14. Working in confined spaces.	14a. Serious illness due to lack of oxygen or exposure to methane gas.	14a. 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. Always have at least one person outside confined area to monitor safety of those working inside.
	14b. Dark work area.	14b. Replace burned out bulbs. Use flashlights or droplights, plugged into GFCI-protected outlets, as auxiliary lighting.
	14c. Working for long periods of time in cramped position can lead to backache or neck ache.	14c. Leave confined area frequently to stretch out.
	14d. Hitting head.	14d. Wear hard hat and safety glasses.
15. Working on top of roof.	15a. Slipping; falling.	15a. Make sure there is no ice in the work area. Walk carefully to maintain footing. Avoid waking near roof edge.
	15b. getting stranded on roof or stuck in air handlers.	15b. Always have a two-way radio with you. Maintain access to air handlers by keeping doors propped open.
	15c. Cuts from bolts or other sharp objects that are sticking up.	15c. Wear knee pads.
	15d. Getting blown off roof of Christiana Towers by high winds.	15d. If possible, postpone work if day is too windy. Never go too near roof edge.
16. Removing ceiling tiles.	16a. Objects on top of ceiling may fall, striking worker.	16a. Before removing any tiles, pull back a tile and survey area for hazards.
	16b. Inhalation of dust; dust in eyes.	16b. Wear dust mask and safety glasses.
	16c. Contact with fiberglass insulation could cause itching or other irritation.	16c. Wear safety glasses, and optionally, gloves, a dust mask, coveralls and/or long-sleeve shirt.

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	16d. Serious illness from exposure to asbestos.	16d. If unsure whether or not ceiling contains asbestos, have safety department check area before beginning work. If the ceiling contains asbestos, have the asbestos abatement crew remove asbestos before beginning work.
17. Cutting hole in ceiling plaster or drywall using hand tools.	17a. Cuts, pinches, smashes, punctures, severing of fingers.	17a. Keep tools in good condition. Inspect tools before use. Wear safety glasses. Work away from yourself. Use normal caution required for all hand tools.
	17b. Inhalation of dust; dust in eyes.	17b. Wear dust mask and safety glasses.
18. Disassembling valves.	18. Burns from hot water or steam shooting out of pipes.	18. Turn off valves before beginning work. Vent work area with other valves to make sure pressure is off.
19. Working on coils.	19. Burns from material shooting out of coil.	19. Turn off valves before beginning work and drain coil to make sure pressure is off.