

Job Hazard Analysis



University of Washington – Seattle Campus  
Facilities Services – Campus Energy, Utilities & Operations  
Seattle, WA 98195

Working Job Title: Shop 50W – WCUP Mechanic / Lead

JHA Completed by Shop 50W - Manager

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The Job Hazard Analysis form is designed to help supervisors assess and address health and safety hazards that have the potential to cause serious injury or illness (e.g. power tools, electrical repairs). Supervisors can use this document to train staff on safe work procedures.

The information below is a good faith effort to identify hazards encountered by a Shop 50W – WCUP Mechanic / Lead. If a specific job task is not listed below, contact your supervisor to determine if a specific job hazard analysis or work plan is required.

The baseline training requirements for this position are:

- Asbestos Awareness
  - Driver Safety and Awareness Online
  - Fire Extinguisher Hands On
  - First aid & CPR
  - Hepatitis B Vaccination (must be offered)
  - Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS
- Covid-19 Safety Training: Back to the Workplace
  - Ergonomic Online training (optional)
  - Fire Extinguisher Online
  - HazCom/GHS
  - Bloodborne Pathogens for Non-Lab Online
  - Lead Awareness Online

This document will serve as the certification of hazard assessment for personal protective equipment for the above working job title position.

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Driving vehicles	<ul style="list-style-type: none"><li>Bodily injury</li></ul>	<ul style="list-style-type: none"><li>Daily pre-trip vehicle inspection</li><li>Follow all traffic rules</li><li>Maintain current driver’s license</li><li>Report problems with state vehicles</li></ul>	<b>Task Specific Training</b> <ul style="list-style-type: none"><li>Driver Safety and Awareness</li><li>Monthly shop safety meetings on PPE</li><li>Seatbelt use policy</li></ul> <b>PPE</b> <ul style="list-style-type: none"><li>Seatbelt</li></ul>
Computer Work	<ul style="list-style-type: none"><li>Eye strain</li><li>Ergonomic problems such as carpal tunnel and back problems</li></ul>	<ul style="list-style-type: none"><li>Adequate lighting</li><li>Set-up workstation using ergonomic principles</li><li>Request on Ergonomic evaluation from EH&amp;S</li><li>Review ergonomic info on EH&amp;S website</li><li>Take frequent breaks/stretch/move</li></ul>	<b>Task Specific Training</b> <ul style="list-style-type: none"><li>Ergonomic Online training (optional)</li></ul> <b>PPE</b> <ul style="list-style-type: none"><li>Blue Light Filtering glasses (optional)</li></ul>
General use of hand and power tools such as screwdrivers, wrenches, hammers, handheld drills, impact driver, hand grinder, portable band saw, roto hammer.	<ul style="list-style-type: none"><li>Bodily injury</li></ul>	<ul style="list-style-type: none"><li>Follow industry safety standards for operating power/hand tools</li><li>Location of exits</li><li>Location of fire extinguisher</li><li>Location of first aid kit</li><li>Safety Data Sheets (SDS) for chemical and products</li></ul>	<b>Task Specific Training</b> <ul style="list-style-type: none"><li>Monthly shop safety meetings on PPE and SDS</li></ul> <b>PPE</b> <ul style="list-style-type: none"><li>Gloves (as needed)</li><li>Hearing protection (as needed)</li><li>Impact glasses (as needed)</li><li>Face shield (as needed)</li><li>Substantial footwear</li><li>Use of <u>HEPA-equipped</u> roto hammer when drilling into concrete (for proper silica control)</li></ul>
Maintain inventory supplies and receive deliveries with forklift, hand truck, pallet jacks, etc	<ul style="list-style-type: none"><li>Ergonomic problems such as carpal tunnel and back problems</li><li>Material Handling (ie, forklift, pallet jack)</li></ul>	<ul style="list-style-type: none"><li>Get help or use lifting tools for items exceeding 50 pounds or is an awkward shape</li><li>Request an ergonomic evaluation from EH&amp;S</li><li>Set-up workstation using ergonomic principles</li><li>Take frequent breaks/stretch</li><li>Use hand cart and pallet jack</li></ul>	<b>Task Specific Training</b> <ul style="list-style-type: none"><li>Back protection &amp; Lifting Safety Online</li><li>Ergonomic Online training (optional)</li><li>Monthly shop safety meetings on PPE</li><li>Forklift Operator Safety</li><li>Flagger &amp; Traffic Control (for deliveries)</li></ul> <b>PPE</b> <ul style="list-style-type: none"><li>Gloves (cut-less if opening boxes)</li><li>Dusk mask (as needed)</li><li>Safety glasses (as needed)</li><li>Substantial footwear</li><li>Footwear with safety toe (as required)</li></ul>

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Maintain, repair, and inspect pumps, heat exchangers, chillers, and diesel generators – located outdoors.	<ul style="list-style-type: none"> <li>Airborne contaminants (such as odors, vapor, fume, wildfire smoke, refrigerant leak)</li> <li>Biological hazards (such as sanitary sewer leaks &amp; other bacteria, blood)</li> <li>Electrically energized equipment</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Fall hazard</li> <li>Hazardous chemicals (such as chemicals in hydronic systems, solvents, degreasers)</li> <li>Hazardous energy (mechanical, heat, pressure (gas or liquid lines))</li> <li>Heat stress – indoors</li> <li>Insufficient lighting</li> <li>Material Handling (ie, forklift, hoisting/rigging)</li> <li>Noise</li> <li>Outdoor heat exposure</li> <li>Overhead equipment/hazards</li> <li>Power/Hand tools</li> <li>Regulated materials such as asbestos, lead, silica</li> <li>Slip/trip/fall</li> <li>Scaffolding</li> <li>Vermin feces (such as bird or rodent)</li> <li>Wildfire Smoke</li> <li>Work off/use of ladders</li> </ul>	<ul style="list-style-type: none"> <li>Avoid energized electrical work when possible</li> <li>Barricades/signs/spotter (if applicable)</li> <li>Building system shutdown</li> <li>Check-in with control room prior to work</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>Eye wash and deluge shower station</li> <li>Fall protection work plan (if applicable)</li> <li>Hot Work Permit Program/Policy with SFD Issued permit for site.</li> <li>If hot, drink water and take necessary rest breaks</li> <li>Lift (MEWP: scissor/single post)</li> <li>Lockout procedure, LOTO locks &amp; tags</li> <li>Location of exits</li> <li>Location of fire extinguisher</li> <li>Location of first aid kit</li> <li>Heat Related Illnesses Prevention Plan</li> <li>Outdoor Heat Exposure Plan</li> <li>Pest Contractor – Stop Bugging Me</li> <li>Refrigerant leak SOP (if applicable)</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Shop safety equipment maintenance/repair procedures.</li> <li>This job position does not typically perform work on regulated building materials</li> <li>Understand and implement tool tethering and toe boards</li> <li>Understand and implement safe practices for lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Understand and implement industry safety standards for operating power/hand tools</li> <li>Understand and implement regulatory practices / standards for operating a forklift</li> <li>Understand and implement regulatory practices / standards for operating a hoist</li> <li>Understand and implement the Utility Tunnel Access Program</li> <li>Use temporary lighting (such as flashlights, head lamps)</li> <li>UWF COVID-Prevention Plan</li> <li>Wildfire Smoke Response Plan</li> </ul>	<p><b>Task Specific Training</b></p> <ul style="list-style-type: none"> <li>Arc Flash and Electrical Safety Best Practices (NFPA 70E) Online</li> <li>Audiometric Hearing Test</li> <li>Back protection &amp; Lifting Safety Online</li> <li>Crystalline Silica Safety Online</li> <li>Fall Protection</li> <li>Forklift Operator Safety</li> <li>Hoisting and Rigging</li> <li>Hearing Protection/Conservation Online</li> <li>Ladder Safety Hands On</li> <li>Ladder Safety Online</li> <li>Lockout/Tagout Safety</li> <li>MEWP training with scissor/single post</li> <li>Outdoor Heat Exposure Online</li> <li>Refrigerant Monitoring</li> <li>Respirator training &amp; Fit Test</li> <li>Scaffold Safety</li> <li>Supv LOTO Field Evaluation</li> <li>Wildfire Smoke training Online</li> </ul> <p><b>PPE (as required unless noted as needed)</b></p> <ul style="list-style-type: none"> <li>Bump cap -as needed</li> <li>Chemical: splash apron, goggles, splash shield, footwear, gloves</li> <li>Dust mask -as needed</li> <li>Gloves (as needed)</li> <li>Hard hat (as needed)</li> <li>Head light / Flashlight / temporary lighting (as needed)</li> <li>Hearing protection - as needed</li> <li>Impact glasses/goggles</li> <li>Personal fall restraint/arrest equipment</li> <li>Respirator</li> <li>Safety toe footwear</li> <li>Substantial footwear</li> <li>Tyvek / Shop coveralls – as needed</li> </ul>

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Perform maintenance and repairs in fuel oil storage tank sumps, including annual confidence testing (contractor performed) in confined space to be entered under alternative methods.	<ul style="list-style-type: none"> <li>Airborne contaminants (such as, vapor, fumes, refrigerant leak)</li> <li>Confined spaces (such as below grade sumps)</li> <li>Contractor Oversight</li> <li>Electrically energized equipment</li> <li>Ergonomic problems such as awkward posture</li> <li>Fall hazard (sump &gt;4’ deep)</li> <li>Hazardous chemicals (such as No. 2 Diesel Fuel)</li> <li>Insufficient lighting</li> <li>Noise</li> <li>Power/Hand tools</li> <li>Slip/trip/fall</li> <li>Vermin feces (such as bird, rodent, rabbit droppings)</li> </ul>	<ul style="list-style-type: none"> <li>Avoid energized electrical work when possible</li> <li>Barricades</li> <li>Check-in with control room prior to work</li> <li>Confined space permit</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>4-gas monitor (ie Bacharach)</li> <li>Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Location of exits</li> <li>Location of fire extinguisher</li> <li>Location of first aid kit</li> <li>Pest Contractor – as needed</li> <li>Refrigerant leak SOP (if applicable)</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Shop safety standard operating procedures</li> <li>This job position does not typically perform work on regulated building materials</li> <li>Understand and implement industry safety standards for operating hand tools</li> </ul>	<p><b>Task Specific Training</b></p> <ul style="list-style-type: none"> <li>Audiometric Hearing Test</li> <li>Back protection &amp; Lifting Safety Online</li> <li>Confined Space Entry /Hands On</li> <li>Fall Protection</li> <li>Hearing Protection/Conservation Online</li> <li>Refrigerant Monitoring</li> </ul> <p><b>PPE (as required unless noted as needed)</b></p> <ul style="list-style-type: none"> <li>Gloves (as needed)</li> <li>Head light / Flashlight / temporary lighting</li> <li>Hearing protection – as needed</li> <li>Impact glasses/goggles – as needed</li> <li>Safety toe footwear</li> </ul>



Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Maintain, repair, inspect, and oversee contractor’s work on cooling towers in confined spaces. Includes Annual Physical Cleaning (with contractors) and Quarterly UW Inspection.	<ul style="list-style-type: none"><li>• Airborne contaminants (such as legionella)</li><li>• Biological hazards (such as cooling tower –legionella, blood)</li><li>• Contractor Oversight</li><li>• Confined spaces (cooling towers)</li><li>• Electrically energized equipment</li><li>• Ergonomic problems such as lifting, repetitive motion, and awkward posture.</li><li>• Fall hazard – Quarterly/Annual on east side.</li><li>• Hazardous chemicals (such as chemicals in hydronic systems such as Hydrogen Peroxide H2O2, Bleach, and defoamer)</li><li>• Hazardous energy (mechanical, pressure (liquid lines))</li><li>• Insufficient lighting</li><li>• Material Handling (hoisting/rigging)</li><li>• Overhead equipment/hazards</li><li>• Power/Hand tools – quarterly use of vacuum or ph probe.</li><li>• Slip/trip/fall</li><li>• Vermin feces (such as bird or rodent)</li><li>• Work off/use of ladders – annual inspections and quarterly vacuum.</li></ul>	<ul style="list-style-type: none"><li>• Avoid energized electrical work when possible</li><li>• Barricades (if applicable - hoistway)</li><li>• Building system shutdown</li><li>• Check-in with control room prior to work</li><li>• Confined space permit</li><li>• Cooling tower work practice ASHRAE 188 Water Safety Plan (WSP)</li><li>• Ensure work area is clear from spills and trip hazards (hoses and cords)</li><li>• Eye wash and deluge shower station</li><li>• Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape or lift.</li><li>• Lockout procedure, LOTO locks &amp; tags</li><li>• Location of exits</li><li>• Location of fire extinguisher</li><li>• Location of first aid kit</li><li>• Pest Contractor – as needed</li><li>• Review contractor site-specific safety plan</li><li>• Safety Data Sheets (SDS) for chemical and products</li><li>• Shop safety standard operating procedures</li><li>• This job position does not typically perform work on regulated building materials</li><li>• Understand and implement industry safety standards for operating power/hand tools (ph probe). Quarterly use of vacuum.</li><li>• Understand and implement regulatory practices / standards for operating a hoist</li><li>• Use temporary lighting (such as flashlights, head lamps)</li><li>• UWF COVID-Prevention Plan</li></ul>	<p><b>Task Specific Training</b></p> <ul style="list-style-type: none"><li>• Back protection &amp; Lifting Safety Online</li><li>• Confined Space Entry /Hands On</li><li>• Fall Protection</li><li>• Hoisting and Rigging</li><li>• Ladder Safety Hands On</li><li>• Ladder Safety Online</li><li>• Lockout/Tagout Safety</li><li>• Supv LOTO Field Evaluation</li></ul> <p><b>PPE (as required unless noted as needed)</b></p> <ul style="list-style-type: none"><li>• Chemical: splash apron/jacket/pants, goggles, face splash shield, footwear/boots, gloves</li><li>• Gloves (as needed)</li><li>• Hard hat</li><li>• Head light / Flashlight / temporary lighting</li><li>• Personal fall restraint/arrest equipment</li><li>• Safety toe footwear</li><li>• Substantial footwear</li></ul>