## **Job Hazard Analysis**

University of Washington Campus Engineering & Operations 3920 Jefferson Road, Seattle, WA 98195



Working Job Title:	HVAC Control Technician / lead	
JHA Completed by		Date:

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 HVAC technicians / leads. 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.

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
Driving vehicles	Bodily injury	<ul> <li>Maintain current driver's license</li> <li>Follow all traffic rules</li> <li>Report problems with state vehicles</li> <li>Daily pre-trip vehicle inspection</li> </ul>	Personal Protective Equipment  Task Specific Training
Computer work	<ul> <li>Ergonomic problems: carpal tunnel and back problems</li> <li>Eye strain</li> </ul>	<ul> <li>Adequate lighting</li> <li>Take frequent breaks/stretch/move</li> <li>Review ergonomic info on EH&amp;S website</li> <li>Request on Ergonomic evaluation from EH&amp;S</li> </ul>	Task Specific Training
General use of hand and power tools such as multimeters, screwdrivers, wrenches, wire strippers	Bodily injury	<ul> <li>Follow industry safety standards for operating power/hand tools</li> <li>Location of first aid kit</li> <li>Location of fire extinguisher</li> <li>Location of exits</li> </ul>	Task Specific Training
Maintain inventory supplies	<ul> <li>Ergonomic problems: carpal tunnel and back problems</li> <li>Work at elevated heights</li> </ul>	<ul> <li>Get help or use lifting tools for items exceeding 50 pounds or is an awkward shape</li> <li>Request on Ergonomic evaluation from EH&amp;S</li> <li>Take frequent breaks/stretch/move</li> <li>Use ergonomic keyboard</li> </ul>	Task Specific Training  Back Protection & Lifting Safety Online  Ladder Safety Hands On Ladder Safety Online  PPE  None
Cell phone usage	Inattention leading to bodily injury	<ul> <li>Be aware of your surroundings</li> <li>Don't drive and talk unless utilizing a 'hands-free' device</li> </ul>	Task Specific Training

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Operate/maintain/repair/ troubleshoot pneumatic and DDC controls <50v – OR - not exposed to energized equipment in public/ classroom/ office areas.	<ul> <li>Airborne contaminants (such as occupant concerns, odors, mold)</li> <li>Biological hazards (such as sanitary sewer leaks, legionella)</li> <li>Compressed gasses (such as solder iron fuel)</li> <li>Confined spaces (such as crawl spaces, ceiling plenums)</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Hazardous chemicals (such as chemicals in hydronic systems)</li> <li>Hazardous energy (mechanical, heat, pressure (gas / liquid lines) )</li> <li>Insufficient lighting</li> <li>Noise</li> <li>Overhead equipment</li> <li>Pedestrian traffic</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 (such as bird or rodent feces)</li> <li>Work off ladders</li> </ul>	<ul> <li>Aerial lift</li> <li>Asbestos work plan (if applicable)</li> <li>Barricades/signs/spotter (if applicable)</li> <li>Building system shutdown</li> <li>Confined space permit (as needed)</li> <li>Check-in with the department contact person prior to work</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>Follow industry safety standards for operating power/hand tools</li> <li>Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Hot Work Permit (ie soldering) if applicable</li> <li>Lead work plan (if applicable)</li> <li>Lockout procedure</li> <li>Location of first aid kit</li> <li>Pest Contractor – as needed</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Use temporary lighting (such as head lamps)</li> <li>Water Treatment Plan</li> </ul>	Task Specific Training  Asbestos <1% & Lead Work Practices  Audiometric Hearing Test  Back Protection & Lifting Safety Online  Bloodborne Pathogens for Non-Lab  Compressed Gas Safety  Confined Space Awareness  Department specific training  (optional)  Fall Protection  Fire Extinguisher Hands On  Fire Extinguisher Online  HazCom/GHS training  Hearing Protection/Conservation Online  Ladder Safety Hands On  Ladder Safety Online  Lift Training  Lockout/Tagout Safety  Monthly shop safety meetings on PPE and SDS  Respirator Training & Fit Test  Scaffold Safety  Supv LOTO Field Evaluation  PPE  Bump cap - as needed  Dust mask - as needed  Dust mask - as needed  Hearing protection - as needed  Hearing protection - as needed  Impact glasses/goggles - as needed  LOTO locks or tags  Personal fall restraint/arrest equipment  Substantial footwear  Any other PPE as specified by the department

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			Personal Protective Equipment
Operate/maintain/repair/ troubleshoot pneumatic and DDC controls <50v – OR - not exposed to energized equipment in mechanical areas	<ul> <li>Airborne contaminants (such as occupant concerns, odors, mold, refrigerant leak)</li> <li>Asbestos exposure</li> <li>Biological hazards (such as sanitary sewer leak, cooling tower – legionella)</li> <li>Compressed gasses (such as solder gun fuel source)</li> <li>Confined spaces</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Hazardous chemicals (such as chemicals in hydronic systems)</li> <li>Hazardous energy (mechanical, heat, pressure (gas / liquid lines))</li> <li>Heat stress</li> <li>Noise</li> <li>Overhead equipment</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 (such as rats, birds, rodents feces)</li> <li>Work off ladders</li> </ul>	<ul> <li>Aerial lift</li> <li>Asbestos work plan (if applicable)</li> <li>Barricades/signs/spotter (if applicable)</li> <li>Building system shutdown</li> <li>Check-in with the department contact person prior to work</li> <li>Confined space permit (if applicable)</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>Follow industry safety standards for operating power/hand tools</li> <li>Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Hot Work Permit (ie soldering) if applicable</li> <li>If hot, drink water and take necessary rest breaks</li> <li>Lead work plan (if applicable)</li> <li>Lockout procedure</li> <li>Location of fire extinguisher</li> <li>Location of first aid kit</li> <li>Pest Contractor – as needed</li> <li>Refrigerant leak work plan (if applicable)</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Use portable refrigerant monitor where needed</li> <li>Use temporary lighting (such as head lamps)</li> <li>Water treatment plan</li> <li>Cooling tower work practice – if applicable</li> </ul>	Task Specific Training  Asbestos <1% & Lead Work Practices  Audiometric Hearing Test  Back Protection & Lifting Safety Online  Bloodborne Pathogens for Non-Lab  Compressed Gas Safety  Confined Space Awareness  Confined Space Entry/Hands On (such as Columbia Lift) — as needed  Department specific training  Frigonomic Online training (optional)  Fall Protection  Fire Extinguisher Hands On  Fire Extinguisher Online  HazCom/GHS training  Hearing Protection /Conservation Online  Ladder Safety Hands On  Ladder Safety Online  Lift Training  Lockout/Tagout Safety  Monthly shop safety meetings on PPE and SDS  Refrigerant Monitoring  Respirator Training & Fit Test  Scaffold Safety  Supv LOTO Field Evaluation  PPE  Bump cap -as needed  Dust mask -as needed  Electrically rated tools  Gloves — as needed  Hearing protection -as needed  Impact glasses/goggles — as needed  LOTO locks or tags  Personal fall restraint/arrest equipment  Substantial footwear

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Operate/maintain/repair/ troubleshoot pneumatic and DDC controls <50v – OR - not exposed to energized equipment in animal areas	<ul> <li>Airborne contaminants (such as occupant concerns, odors, mold)</li> <li>Asbestos exposure</li> <li>Biological hazards (such as sanitary sewer leaks, animal feces, legionella)</li> <li>Compressed gasses (such as solder gun fuel)</li> <li>Confined spaces (such as crawl space, ceiling plenums)</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Hazardous chemicals (such as chemicals in hydronic systems)</li> <li>Hazardous energy (mechanical, heat, pressure (gas or liquid lines))</li> <li>Heat stress</li> <li>Insufficient lighting</li> <li>Noise</li> <li>Overhead equipment</li> <li>Pedestrian traffic</li> <li>Power/Hand tools</li> <li>Regulated materials such as asbestos, lead, silica</li> <li>Slip/trip/fall</li> <li>Work off ladders</li> </ul>	<ul> <li>Asbestos work plan (if applicable)</li> <li>Barricades/signs/spotter (if applicable)</li> <li>Building system shutdown</li> <li>Check-in with the department contact person prior to work</li> <li>Confined space permit (if applicable)</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>Follow industry safety standards for operating power/hand tools</li> <li>Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Hot Work Permit (ie soldering) if applicable</li> <li>If hot, drink water and take necessary rest breaks</li> <li>Lead work plan (if applicable)</li> <li>Lockout procedure</li> <li>Location of first aid kit</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Use portable refrigerant monitor where needed</li> <li>Use temporary lighting (such as head lamps)</li> <li>Water treatment plan</li> </ul>	Task Specific Training  Asbestos <1% & Lead Work Practices  Audiometric Hearing test  Back Protection & Lifting Safety Online  Biosafety—non-human primate areas  Bloodborne Pathogens for Non-Lab Online  Compressed Gas Safety  Confined Space Awareness  Confined Space Entry/Hands On (as needed)  Department specific training  Ergonomic Online training (optional)  Fire Extinguisher Hands On  Fire Extinguisher Online  HazCom/GHS training  Hearing Protection /Conservation Online  Ladder Safety Hands On  Ladder Safety Honline  Lockout/Tagout Safety  Monthly shop safety meetings on PPE and SDS  Refrigerant Monitoring  Respirator training & Fit Test  Supv LOTO Field Evaluation  PPE  Bump cap - as needed  Dust mask - as needed  Gloves — as needed  Head cover — as required  Head light / temporary lighting  Hearing protection -as needed  Impact glasses/goggles  LOTO locks or tags  Shoe covers — as required  Splash face shield — as required  Splash face shield — as required  Substantial footwear  Tyvek coveralls — as required  Any other PPE as specified by the department

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Operate/maintain/repair/ troubleshoot pneumatic and DDC controls when working on exposed equipment that is >50v in laboratory areas	<ul> <li>Airborne contaminants (such as occupant concerns, odors, mold, refrigerant leak)</li> <li>Asbestos exposure</li> <li>Biological hazards (such as sanitary sewer leaks, legionella)</li> <li>Compressed gasses (such as solder gun fuel)</li> <li>Confined spaces (such as crawl space, ceiling plenums)</li> <li>Electrically energized equipment</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Hazardous chemicals (such as chemicals in hydronic systems)</li> <li>Hazardous energy (mechanical, heat, pressure (gas or liquid lines))</li> <li>Insufficient lighting</li> <li>Noise</li> <li>Overhead equipment</li> <li>Pedestrian traffic</li> <li>Power/Hand tools</li> <li>Regulated materials such as asbestos, lead, silica</li> <li>Slip/trip/fall</li> <li>Vermin (such as bird or rodent feces)</li> <li>Work off ladders</li> </ul>	Asbestos work plan (if applicable)     Barricades/signs/spotter (if applicable)     Building system shutdown     Check-in with the department contact person prior to work     Confined space permit (if applicable)     Energized electrical work permit & work plan – as needed     Ensure work area is clear from spills and trip hazards     Follow industry safety standards for operating power/hand tools     Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape     Hot Work Permit (ie soldering) if applicable     Lead work plan (if applicable)     Lockout procedure     Location of exits     Location of fire extinguisher     Location of first aid kit     Pest Contractor – as needed     Safety Data Sheets (SDS) for chemical and products     Use temporary lighting (such as head lamps)     Water Treatment Plan	Task Specific Training  Asbestos <1% & Lead Work Practices Audiometric hearing test Back Protection & Lifting Safety Online Bloodborne Pathogens for Non-Lab Online Compressed Gas Safety Confined Space Awareness Confined Space Entry/Hands On — as needed Department specific training Ergonomic online training (optional) Fire Extinguisher Hands On Fire Extinguisher Online HazCom/GHS training Hearing Protection /Conservation Online Ladder Safety Hands On Ladder Safety Online Lockout/Tagout Safety Monthly shop safety meetings on PPE and SDS NFPA 70E Arc Flash/Electrical Safety Respirator training & Fit Test Supv LOTO Field Evaluation  PPE  Arc Flash clothing- as required per NFPA 70E Bump cap - as needed Dust mask - as needed Electrically rated tools Gloves — as required per NFPA 70E Gloves — as required per NFPA 70E Head cover — as required per NFPA 70E Head light / temporary lighting Hearing protection (as needed) Impact glasses/goggles Impact glasses/goggles Impact glasses/goggles Impact glasses/goggles - as required per NFPA 70E LOTO locks or tags Substantial footwear Substantial leather footwear — as required per NFPA 70E Any other PPE as specified on the department lab entry sign

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and
Operate/maintain/repair/ troubleshoot pneumatic and DDC controls <50v – OR - not exposed to energized equipment in construction areas	<ul> <li>Airborne contaminants (such as occupant concerns, odors, mold, refrigerant leak)</li> <li>Asbestos exposure</li> <li>Biological hazards (such as sanitary sewer leaks, cooling tower -legionella)</li> <li>Compressed gasses (such as solder gun fuel)</li> <li>Confined spaces (such as crawl space, ceiling plenums)</li> <li>Ergonomic problems such as lifting, repetitive motion, awkward posture</li> <li>Hazardous chemicals (such as chemicals in hydronic systems)</li> <li>Hazardous energy (mechanical, heat, pressure (gas or liquid lines))</li> <li>Insufficient lighting</li> <li>Noise</li> <li>Overhead equipment</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 (such as bird or rodent feces)</li> <li>Work off ladders</li> </ul>	<ul> <li>Aerial lift</li> <li>Asbestos work plan (if applicable)</li> <li>Barricades/signs/spotter (if applicable)</li> <li>Building system shutdown</li> <li>Check-in with the construction contact person prior to work</li> <li>Confined space permit (if applicable)</li> <li>Ensure work area is clear from spills and trip hazards</li> <li>Follow industry safety standards for operating power/hand tools</li> <li>Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape</li> <li>Hot Work Permit (ie soldering) if applicable</li> <li>Lead work plan (if applicable)</li> <li>Lockout procedure</li> <li>Location of exits</li> <li>Location of fire extinguisher</li> <li>Location of fire an extended</li> <li>Refrigerant leak work plan (if applicable)</li> <li>Safety Data Sheets (SDS) for chemical and products</li> <li>Use portable refrigerant monitor where needed</li> <li>Use temporary lighting (such as head lamps)</li> <li>Water treatment plan</li> <li>Cooling tower work practice – if applicable</li> </ul>	Personal Protective Equipment  Task Specific Training  Asbestos <1% & Lead Work Practices Audiometric hearing test Back Protection & Lifting Safety Online Bloodborne Pathogens for Non-Lab Online Compressed Gas Safety Confined Space Awareness Confined Space Entry/Hands On – as needed Construction site specific training Ergonomic online training (optional) Fall Protection Fire Extinguisher Hands On Fire Extinguisher Online First aid & CPR – as required HazCom/GHS training Hearing Protection /Conservation Online Ladder Safety Hands On Ladder Safety Online Lift Training Lockout/Tagout Safety Monthly shop safety meetings on PPE and SDS Refrigerant Monitoring Respirator training & Fit Test Scaffold Safety Supv LOTO Field Evaluation  PPE  Dust mask - as needed Gloves – as needed Gloves – as needed Hard hat Head light / temporary lighting Hearing protection (as needed) Impact glasses/goggles LOTO locks or tags Personal fall restraint/arrest equipment Safety vest Footwear required by construction site Any other PPE as specified on the construction site

Operate/maintain/repair/ troubleshoot pneumatic and DDC controls when working on exposed equipment that is >50v in construction areas  • Airborne contaminants (such as occupant concerns, odors, mold, refrigerant leak) • Asbestos work plan (if applicable) • Asbestos work plan (if applicable) • Barricades/signs/spotter (if applicable) • Check-in with the construction contact person prior to work • Confined space permit (if	pecific Training pestos <1% & Lead Work Practices diometric hearing test ck Protection & Lifting Safety
troubleshoot pneumatic and DDC controls when working on exposed equipment that is >50v in construction areas  as occupant concerns, odors, mold, refrigerant leak)  Asbestos work plan (if applicable)  Barricades/signs/spotter (if applicable)  Barricades/signs/spotter (if applicable)  Barricades/signs/spotter (if applicable)  Bac Onl Check-in with the construction contact person prior to work  Compressed gasses (such as  Confined space permit (if	diometric hearing test ck Protection & Lifting Safety
Confined spaces (such as crawl space, ceiling plenums) Electrically energized equipment Ergonomic problems such as lifting, repetitive motion, awkward posture Hazardous chemicals (such as chemicals in hydronic systems) Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) Insufficient lighting Noise Overhead equipment Power/Hand tools Regulated materials such as asbestos, lead, silica Silp/trip/fall Scaffolding Vermin (such as bird or rodent feces) Work off ladders Work off ladders  Energized electrical work permit & work paradis concentration of the work area is clear from spills and trip hazards Figure follow industry safety standards for operating power/hand tools Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) Location of fire extinguisher Location of exits Vore Correctore Location of fire extinguisher Location of fire extinguisher Location of fire extinguisher Location of fire extinguisher Location of exits Vore contractor—as needed Pest Contractor—as needed Ref help or use lifting tools for items exceeding 50 pounds, or is an awkward shape Location of exits Pest Contractor—as needed Pest Contractor—as needed Pest Contractor—as needed Location of fire extinguisher Location of exits Pest Contractor—as needed Pest Contractor—a	and space Awareness Infined Space Awareness Infined Space Entry/Hands On — as eded Instruction site specific training I protection E Extinguisher Hands On E Extinguisher Online Ist aid & CPR — as required I com/GHS training I aring Protection /Conservation I line I dder Safety Hands On I dder Safety Online I Training I ckout/Tagout Safety I onthly shop safety meetings on I and SDS I A 70E Arc Flash/Electrical Safety I frigerant Monitoring I spirator training & Fit Test I offold Safety I ov LOTO Field Evaluation  I Flash clothing- as required per I A 70E I st mask - as needed I ctrically rated tools I oves — as required per NFPA 70E I oves — as needed I over — as required per NFPA 70E I oves — as needed I over — as required per NFPA