

Job Hazard Analysis



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

Working Job Title: CEUO Electrician High Voltage and Lead

JHA Completed by Jeremy Park, Shop 51 Manger

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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 CEUO Electrician High Voltage and 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
- Lead Awareness Online
- Ergonomic Online training (optional)
- Fire Extinguisher Online
- HazCom/GHS
- Bloodborne Pathogens for Non-Lab Online
- Covid-19 Safety Training: Back to the Workplace

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"> Bodily injury 	<ul style="list-style-type: none"> Daily pre-trip vehicle inspection Follow all traffic rules Maintain current driver's license Report problems with state vehicles 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Driver Safety and Awareness Monthly shop safety meetings on PPE Seatbelt use policy <p>PPE</p> <ul style="list-style-type: none"> Seatbelt
Computer Work	<ul style="list-style-type: none"> Eye strain Ergonomic problems such as carpal tunnel and back problems 	<ul style="list-style-type: none"> Adequate lighting Request on Ergonomic evaluation from EH&S Review ergonomic info on EH&S website Take frequent breaks/stretch/move 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Ergonomic Online training (optional) <p>PPE</p> <ul style="list-style-type: none"> None
General use of hand and power tools such as multimeters, screwdrivers, wrenches, wire strippers	<ul style="list-style-type: none"> Bodily injury 	<ul style="list-style-type: none"> Follow industry safety standards for operating power/hand tools Location of exits Location of fire extinguisher Location of first aid kit Safety Data Sheets (SDS) for chemical and products 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Monthly shop safety meetings on PPE and SDS <p>PPE</p> <ul style="list-style-type: none"> Gloves (as needed) Hearing protection (as needed) Impact glasses (as needed) Substantial footwear
Maintain inventory supplies	<ul style="list-style-type: none"> Ergonomic problems such as carpal tunnel and back problems Work off ladders 	<ul style="list-style-type: none"> Get help or use lifting tools for items exceeding 50 pounds or is an awkward shape Request an ergonomic evaluation from EH&S Set-up workstation using ergonomic principles Take frequent breaks/stretch Use hand cart 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Back protection & Lifting Safety Online Ergonomic Online training (optional) Ladder Safety Hands On Ladder Safety Online Monthly shop safety meetings on PPE <p>PPE</p> <ul style="list-style-type: none"> Dusk mask (as needed) Safety glasses (as needed) Substantial footwear
Cell phone usage	<ul style="list-style-type: none"> Inattention leading to bodily injury 	<ul style="list-style-type: none"> Be aware of your surroundings Don't drive and talk unless utilizing a 'hands-free' device 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Driver Safety and Awareness <p>PPE</p> <ul style="list-style-type: none"> None

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<p>Performing switching orders</p> <p>(Switch list for a clearance, or trouble shooting, transferring power)</p>	<ul style="list-style-type: none"> Airborne contaminants (such as wildfire smoke, refrigerant) Electrically energized equipment Ergonomic problems such as lifting, repetitive motion, awkward posture Fall hazard Hazardous chemicals (such as refrigerant in Wm Gates bldg) Noise Outdoor heat exposure Slip/trip/fall Wildfire Smoke 	<ul style="list-style-type: none"> Building system shutdown Ensure work area is clear from spills and trip hazards Lockout procedure, Clearance/Switching Order procedures, LOTO locks & tags Location of exits Location of fire extinguisher Location of first aid kit Outdoor Heat Exposure Plan Refrigerant leak SOP (escort by trained personnel) Shop safety standard operating procedures This job position does not typically perform work on regulated building materials Wildfire Smoke Response Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Audiometric Hearing Test Hearing Protection/Conservation Online High Voltage Electrical Safety Low Voltage Electrical Safety Outdoor Heat Exposure Online Supv LOTO Field Evaluation Wildfire Smoke training Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear Hearing protection - as needed

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<p>Operate/repair/maintenance/inspect/troubleshoot high voltage switches, substation breakers, substation relays, transformers, secondary breakers, power cables</p> <p>This includes maintaining/testing automatic transfer switches</p>	<ul style="list-style-type: none"> Airborne contaminants (such as wildfire smoke, refrigerant) Confined spaces (such as crawl space, ceiling plenums, cooling towers) Construction Activities Electrically energized equipment Ergonomic problems (such as lifting, awkward posture) Hazardous chemicals (such as cable cleaner, degreasers) Hazardous energy (mechanical, heat) Heat stress – indoors Insufficient lighting Material Handling (ie, hoisting /rigging) Noise Outdoor heat exposure Overhead equipment/hazards Power/Hand tools Regulated materials such as asbestos, lead, silica Slip/trip/fall Vehicle traffic UV light (radiant energy – radio frequency) Wildfire Smoke Use of ladders 	<ul style="list-style-type: none"> Avoid energized electrical work when possible Barricades/signs/spotter (if applicable – will have Gardeners provide flagging if needed) Building system shutdown Check-in with the construction contact person / control room prior to work Ensure work area is clear from spills and trip hazards Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape If hot, drink water and take necessary rest breaks Lockout procedure, LOTO locks & tags, Clearance/Switching Order procedure Location of exits Location of fire extinguisher Location of first aid kit Outdoor Heat Exposure Plan Pest Contractor – as needed Refrigerant leak SOP (escort by trained personnel) Review contractor site specific safety plan Safety Data Sheets (SDS) for chemical and products SOP for Entering Below Grade Vault (if applicable) This job position does not typically perform work on regulated building materials Understand and implement industry safety standards for operating power/hand tools Understand and implement regulatory practices / standards for operating a hoist Use temporary lighting (such as flashlights, head lamps) UWF COVID-Prevention Plan Wildfire Smoke Response Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Audiometric Hearing Test Back protection & Lifting Safety Online Confined Space Entry /Hands On High Voltage Electrical Safety Hoisting and Rigging Hearing Protection/Conservation Online Ladder Safety Hands On Ladder Safety Online Lockout/Tagout Low Voltage Electrical Safety Outdoor Heat Exposure Online Radio Frequency Radiation Safety Awareness Supv LOTO Field Evaluation Wildfire Smoke training Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear Construction – hard hat, impact glasses/goggles, safety vest, gloves, substantial footwear Dust mask -as needed Electrically rated tools Gloves Head light / Flashlight / temporary lighting Hearing protection - as needed Safety Vest Steel toe footwear Substantial footwear Any other PPE as specified by the construction site / site specific work plan

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Testing and grounding (on devices such as switches, substations, elbows (located in vaults))</p> <p>Voltage is 120v – 13KV</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as wildfire smoke) • Confined spaces (such as vaults) • Electrically energized equipment • Noise • Outdoor heat exposure • Power/Hand tools • Slip/trip/fall • Wildfire Smoke • Unauthorized personnel (not qualified) 	<ul style="list-style-type: none"> • Arc-Flash study (PPE greater than category 2) • Barricades/signs/spotter (if applicable) • Building system shutdown • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • JHA – Enter underground vaults • Lockout procedure, LOTO locks & tags, Clearance / Switching Order procedures • Location of exits • Location of fire extinguisher • Location of first aid kit • Outdoor Heat Exposure Plan • SOP for Entering Below Grade Vault (if applicable) • Switching Orders (if applicable) • This job position does not typically perform work on regulated building materials • Understand and implement industry safety standards for operating power/hand tools • Use temporary lighting (such as flashlights, head lamps) • UWF COVID-Prevention Plan • Wildfire Smoke Response Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Confined Space Entry /Hands On • Hearing Protection/Conservation Online • High Voltage Electrical Safety • Low Voltage Electrical Safety • Outdoor Heat Exposure Online • Wildfire Smoke training Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear • Electrically rated tools • Hearing protection - as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>PCB Inspections</p>	<ul style="list-style-type: none"> • Noise • Regulated materials such as PCBs • Slip/trip/fall 	<ul style="list-style-type: none"> • Ensure work area is clear from spills and trip hazards • Location of exits • Location of fire extinguisher • Location of first aid kit • Safety Data Sheets (SDS) for chemical and products • SOP for PCBs • This job position does not typically perform work on regulated building materials • UWF COVID-Prevention Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Department specific training (EH&S On the Job) • Hearing Protection/Conservation Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Gloves • Hard hat • Hearing protection - as needed • Chemical glasses/goggles – as needed • Substantial footwear

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<p>Connect and activate emergency generators</p> <p>(larger generator on trailer is delivered to a building by another shop)</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as wildfire smoke) • Electrically energized equipment • Ergonomic problems such as lifting, repetitive motion, awkward posture • Insufficient lighting • Material Handling (ie, forklift, hoisting/rigging) • Noise • Outdoor heat exposure • Pedestrian traffic • Power/Hand tools • Slip/trip/fall • Vehicle traffic (not active roadways) • Wildfire Smoke • Work off/use of ladders 	<ul style="list-style-type: none"> • Barricades/signs/spotter set at the NPFA 70E limited approach boundary • Barricades/signs/spotter (if applicable – will have Gardeners provide fagging if needed) • Building system shutdown • Check-in with the department / control room prior to work • Ensure work area is clear from spills and trip hazards • Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape • Lockout procedure, LOTO locks & tags, Clearance/switching order procedures • Location of exits • Location of fire extinguisher • Location of first aid kit • Outdoor Heat Exposure Plan • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Use temporary lighting (such as flashlights, head lamps) • UWF COVID-Prevention Plan • Wildfire Smoke Response Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Hearing Protection/Conservation Online • High Voltage Electrical Safety • Ladder Safety Hands On • Ladder Safety Online • Low Voltage Electrical Safety • Outdoor Heat Exposure Online • Wildfire Smoke training Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear • Electrically rated tools • Gloves • Head light / Flashlight / temporary lighting • Hearing protection - as needed • Impact glasses/goggles – as needed • Substantial footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Racking in/out a breaker in/out energized bus</p>	<ul style="list-style-type: none"> • Construction Activities • Electrically energized equipment • Ergonomic problems such as lifting, repetitive motion, awkward posture • Noise • Power/Hand tools • Slip/trip/fall 	<ul style="list-style-type: none"> • Arc flash study (boundaries & PPE) • Building system shutdown • Check-in with the construction contact person / control room prior to work (if applicable) • Ensure work area is clear from spills and trip hazards • Lockout procedure, LOTO locks & tags, Clearance/switching order procedures • Location of exits • Location of fire extinguisher • Location of first aid kit • SOP – Racking Breakers • This job position does not typically perform work on regulated building materials • Understand and implement industry safety standards for operating power/hand tools • UWF COVID-Prevention Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Hearing Protection/Conservation Online • High Voltage Electrical Safety • Lockout/Tagout • Low Voltage Electrical Safety • Supv LOTO Field Evaluation <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> • Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear • Construction – hard hat, impact glasses/goggles, safety vest, gloves, substantial footwear • Electrically rated tools • Hearing protection - as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Locating underground electrical cable	<ul style="list-style-type: none"> Airborne contaminants (such as wildfire smoke) Biological hazards (such as blood, needles, vials) Hazardous chemicals (such as spray) Outdoor heat exposure Pedestrian traffic Power/Hand tools Slip/trip/fall Vehicle traffic Vermin feces (such as bird or rodent) Wildfire Smoke 	<ul style="list-style-type: none"> Avoid energized electrical work when possible Barricades/signs/spotter (if applicable – will have Gardeners provide fagging if needed) Ensure work area is clear from spills and trip hazards Location of exits Location of fire extinguisher Location of first aid kit Outdoor Heat Exposure Plan Pest Contractor – as needed Safety Data Sheets (SDS) for chemical and products Shop safety standard operating procedures This job position does not typically perform work on regulated building materials Understand and implement industry safety standards for operating power/hand tools UWF COVID-Prevention Plan Wildfire Smoke Response Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Outdoor Heat Exposure Online Wildfire Smoke training Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> Gloves – as needed Impact glasses/goggles – as needed Safety vest – as needed Substantial footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Power Circuit Breaker testing (primary current injection 100-6000amps)	<ul style="list-style-type: none"> Electrically energized equipment Ergonomic problems such as lifting, awkward posture Hazardous energy (mechanical, Power/Hand tools Slip/trip/fall 	<ul style="list-style-type: none"> Barricades/signs Ensure work area is clear from spills and trip hazards Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape Location of exits Location of fire extinguisher Location of first aid kit Shop safety standard operating procedures (breaker testing SOP) This job position does not typically perform work on regulated building materials Understand and implement industry safety standards for operating power/hand tools UWF COVID-Prevention Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Back protection & Lifting Safety Online High Voltage Electrical Safety Low Voltage Electrical Safety <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwear Steel toe footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Power Circuit Breaker Transport (from electrical room to shop)	<ul style="list-style-type: none"> Ergonomic problems such as lifting, awkward posture Hazardous energy (pinch points) Material Handling (breaker hoist) Slip/trip/fall 	<ul style="list-style-type: none"> spotter Ensure work area is clear from spills and trip hazards Get help or use lifting tools for items exceeding 50 pounds, or is an awkward shape Location of exits Location of fire extinguisher Location of first aid kit Shop SOP for hoisting breaker This job position does not typically perform work on regulated building materials Understand and implement regulatory practices / standards for operating a breaker hoist UWF COVID-Prevention Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> Back protection & Lifting Safety Online <p>PPE (as required unless noted as needed)</p> <ul style="list-style-type: none"> Gloves Steel/composite toe footwear