

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 Date: April 2023

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	Task Specific Training <ul style="list-style-type: none">• Driver Safety and Awareness• Monthly shop safety meetings on PPE• Seatbelt use policy PPE <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	Task Specific Training <ul style="list-style-type: none">• Ergonomic Online training (optional) PPE <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	Task Specific Training <ul style="list-style-type: none">• Monthly shop safety meetings on PPE and SDS PPE <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	Task Specific Training <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 PPE <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	Task Specific Training <ul style="list-style-type: none">• Driver Safety and Awareness PPE <ul style="list-style-type: none">• None

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Performing switching orders (Switch list for a clearance, or trouble shooting, transferring power)	<ul style="list-style-type: none">Airborne contaminants (such as wildfire smoke, refrigerant)Electrically energized equipmentErgonomic problems such as lifting, repetitive motion, awkward postureFall hazardHazardous chemicals (such as refrigerant in Wm Gates bldg)NoiseOutdoor heat exposureSlip/trip/fallWildfire Smoke	<ul style="list-style-type: none">Building system shutdownEnsure work area is clear from spills and trip hazardsLockout procedure, Clearance/Switching Order procedures, LOTO locks & tagsLocation of exitsLocation of fire extinguisherLocation of first aid kitOutdoor Heat Exposure PlanRefrigerant leak SOP (escort by trained personnel)Shop safety standard operating proceduresThis job position does not typically perform work on regulated building materialsWildfire Smoke Response Plan	Task Specific Training <ul style="list-style-type: none">Audiometric Hearing TestHearing Protection/Conservation OnlineHigh Voltage Electrical SafetyLow Voltage Electrical SafetyOutdoor Heat Exposure OnlineSupv LOTO Field EvaluationWildfire Smoke training Online PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearHearing protection - as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Operate/repair/maintenance/inspect/troubleshoot high voltage switches, substation breakers, substation relays, transformers, secondary breakers, power cables This includes maintaining/testing automatic transfer switches	<ul style="list-style-type: none">Airborne contaminants (such as wildfire smoke, refrigerant)Confined spaces (such as crawl space, ceiling plenums, cooling towers)Construction ActivitiesElectrically energized equipmentErgonomic problems (such as lifting, awkward posture)Hazardous chemicals (such as cable cleaner, degreasers)Hazardous energy (mechanical, heat)Heat stress – indoorsInsufficient lightingMaterial Handling (ie, hoisting /rigging)NoiseOutdoor heat exposureOverhead equipment/hazardsPower/Hand toolsRegulated materials such as asbestos, lead, silicaSlip/trip/fallVehicle trafficUV light (radiant energy – radio frequency)Wildfire SmokeUse of ladders	<ul style="list-style-type: none">Avoid energized electrical work when possibleBarricades/signs/spotter (if applicable)Building system shutdownCheck-in with the construction contact person / control room prior to workEnsure work area is clear from spills and trip hazardsGet help or use lifting tools for items exceeding 50 pounds, or is an awkward shapeIf hot, drink water and take necessary rest breaksLockout procedure, LOTO locks & tags, Clearance/Switching Order procedureLocation of exitsLocation of fire extinguisherLocation of first aid kitOutdoor Heat Exposure PlanPest Contractor – as neededRefrigerant leak SOP (escort by trained personnel)Review contractor site specific safety planSafety Data Sheets (SDS) for chemical and productsSOP for Entering Below Grade Vault (if applicable)This job position does not typically perform work on regulated building materialsUnderstand and implement industry safety standards for operating power/hand toolsUnderstand and implement regulatory practices / standards for operating a hoistUse temporary lighting (such as flashlights, head lamps)UWF COVID-Prevention PlanWildfire Smoke Response Plan	Task Specific Training <ul style="list-style-type: none">Audiometric Hearing TestBack protection & Lifting Safety OnlineConfined Space Entry /Hands OnFlagger & Traffic ControlHigh Voltage Electrical SafetyHoisting and RiggingHearing Protection/Conservation OnlineLadder Safety Hands OnLadder Safety OnlineLockout/TagoutLow Voltage Electrical SafetyOutdoor Heat Exposure OnlineRadio Frequency Radiation Safety AwarenessSupv LOTO Field EvaluationWildfire Smoke training Online PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearConstruction – hard hat, impact glasses/goggles, safety vest, gloves, substantial footwearDust mask -as neededElectrically rated toolsGlovesHead light / Flashlight / temporary lightingHearing protection - as neededSafety VestSteel toe footwearSubstantial footwearAny other PPE as specified by the construction site / site specific work plan

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Testing and grounding (on devices such as switches, substations, elbows (located in vaults)) Voltage is 120v – 13KV	<ul style="list-style-type: none">Airborne contaminants (such as wildfire smoke)Confined spaces (such as vaults)Electrically energized equipmentNoiseOutdoor heat exposurePower/Hand toolsSlip/trip/fallWildfire SmokeUnauthorized personnel (not qualified)	<ul style="list-style-type: none">Arc-Flash study (PPE greater than category 2)Barricades/signs/spotter (if applicable)Building system shutdownConfined space permit (if applicable)Ensure work area is clear from spills and trip hazardsJHA – Enter underground vaultsLockout procedure, LOTO locks & tags, Clearance / Switching Order proceduresLocation of exitsLocation of fire extinguisherLocation of first aid kitOutdoor Heat Exposure PlanSOP for Entering Below Grade Vault (if applicable)Switching Orders (if applicable)This job position does not typically perform work on regulated building materialsUnderstand and implement industry safety standards for operating power/hand toolsUse temporary lighting (such as flashlights, head lamps)UWF COVID-Prevention PlanWildfire Smoke Response Plan	Task Specific Training <ul style="list-style-type: none">Audiometric Hearing TestConfined Space Entry /Hands OnHearing Protection/Conservation OnlineHigh Voltage Electrical SafetyLow Voltage Electrical SafetyOutdoor Heat Exposure OnlineWildfire Smoke training Online PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearElectrically rated toolsHearing protection - as needed

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
PCB Inspections	<ul style="list-style-type: none">NoiseRegulated materials such as PCBsSlip/trip/fall	<ul style="list-style-type: none">Ensure work area is clear from spills and trip hazardsLocation of exitsLocation of fire extinguisherLocation of first aid kitSafety Data Sheets (SDS) for chemical and productsSOP for PCBsThis job position does not typically perform work on regulated building materialsUWF COVID-Prevention Plan	Task Specific Training <ul style="list-style-type: none">Department specific training (EH&S On the Job)Hearing Protection/Conservation Online PPE (as required unless noted as needed) <ul style="list-style-type: none">GlovesHard hatHearing protection - as neededChemical glasses/goggles – as neededSubstantial footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Connect and activate emergency generators (larger generator on trailer is delivered to a building by another shop)	<ul style="list-style-type: none">Airborne contaminants (such as wildfire smoke)Electrically energized equipmentErgonomic problems such as lifting, repetitive motion, awkward postureInsufficient lightingMaterial Handling (ie, forklift, hoisting/rigging)NoiseOutdoor heat exposurePedestrian trafficPower/Hand toolsSlip/trip/fallVehicle traffic (not active roadways)Wildfire SmokeWork off/use of ladders	<ul style="list-style-type: none">Barricades/signs/spotter set at the NPFA 70E limited approach boundaryBarricades/signs/spotter (if applicable)Building system shutdownCheck-in with the department / control room prior to workEnsure work area is clear from spills and trip hazardsGet help or use lifting tools for items exceeding 50 pounds, or is an awkward shapeLockout procedure, LOTO locks & tags, Clearance/switching order proceduresLocation of exitsLocation of fire extinguisherLocation of first aid kitOutdoor Heat Exposure PlanShop safety standard operating proceduresThis job position does not typically perform work on regulated building materialsUse temporary lighting (such as flashlights, head lamps)UWF COVID-Prevention PlanWildfire Smoke Response Plan	Task Specific Training <ul style="list-style-type: none">Audiometric Hearing TestBack protection & Lifting Safety OnlineHearing Protection/Conservation OnlineHigh Voltage Electrical SafetyLadder Safety Hands OnLadder Safety OnlineLow Voltage Electrical SafetyOutdoor Heat Exposure OnlineWildfire Smoke training Online PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearElectrically rated toolsGlovesHead light / Flashlight / temporary lightingHearing protection - as neededImpact glasses/goggles – as neededSubstantial footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Racking in/out a breaker in/out energized bus	<ul style="list-style-type: none">Construction ActivitiesElectrically energized equipmentErgonomic problems such as lifting, repetitive motion, awkward postureNoisePower/Hand toolsSlip/trip/fall	<ul style="list-style-type: none">Arc flash study (boundaries & PPE)Building system shutdownCheck-in with the construction contact person / control room prior to work (if applicable)Ensure work area is clear from spills and trip hazardsLockout procedure, LOTO locks & tags, Clearance/Switching order proceduresLocation of exitsLocation of fire extinguisherLocation of first aid kitSOP – Racking BreakersThis job position does not typically perform work on regulated building materialsUnderstand and implement industry safety standards for operating power/hand toolsUWF COVID-Prevention Plan	Task Specific Training <ul style="list-style-type: none">Audiometric Hearing TestBack protection & Lifting Safety OnlineHearing Protection/Conservation OnlineHigh Voltage Electrical SafetyLockout/TagoutLow Voltage Electrical SafetySupv LOTO Field Evaluation PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearConstruction – hard hat, impact glasses/goggles, safety vest, gloves, substantial footwearElectrically rated toolsHearing 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 exposurePedestrian trafficPower/Hand toolsSlip/trip/fallVehicle trafficVermin feces (such as bird or rodent)Wildfire Smoke	<ul style="list-style-type: none">Avoid energized electrical work when possibleEnsure work area is clear from spills and trip hazardsLocation of exitsLocation of fire extinguisherLocation of first aid kitOutdoor Heat Exposure PlanPest Contractor – as neededSafety Data Sheets (SDS) for chemical and productsShop safety standard operating proceduresThis job position does not typically perform work on regulated building materialsUnderstand and implement industry safety standards for operating power/hand toolsUWF COVID-Prevention PlanWildfire Smoke Response Plan	Task Specific Training <ul style="list-style-type: none">Outdoor Heat Exposure OnlineWildfire Smoke training Online PPE (as required unless noted as needed) <ul style="list-style-type: none">Gloves – as neededImpact glasses/goggles – as neededSafety vest – as neededSubstantial 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 equipmentErgonomic problems such as lifting, awkward postureHazardous energy (mechanical,Power/Hand toolsSlip/trip/fall	<ul style="list-style-type: none">Barricades/signsEnsure work area is clear from spills and trip hazardsGet help or use lifting tools for items exceeding 50 pounds, or is an awkward shapeLocation of exitsLocation of fire extinguisherLocation of first aid kitShop safety standard operating procedures (breaker testing SOP)This job position does not typically perform work on regulated building materialsUnderstand and implement industry safety standards for operating power/hand toolsUWF COVID-Prevention Plan	Task Specific Training <ul style="list-style-type: none">Back protection & Lifting Safety OnlineHigh Voltage Electrical SafetyLow Voltage Electrical Safety PPE (as required unless noted as needed) <ul style="list-style-type: none">Arc Flash rated: clothing, Tyvek coveralls, gloves, hard hat, head cover, impact glasses/goggles, electric hazard-footwearSteel 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 postureHazardous energy (pinch points)Material Handling (breaker hoist)Slip/trip/fall	<ul style="list-style-type: none">spotterEnsure work area is clear from spills and trip hazardsGet help or use lifting tools for items exceeding 50 pounds, or is an awkward shapeLocation of exitsLocation of fire extinguisherLocation of first aid kitShop SOP for hoisting breakerThis job position does not typically perform work on regulated building materialsUnderstand and implement regulatory practices / standards for operating a breaker hoistUWF COVID-Prevention Plan	Task Specific Training <ul style="list-style-type: none">Back protection & Lifting Safety Online PPE (as required unless noted as needed) <ul style="list-style-type: none">GlovesSteel/composite toe footwear