

Job Hazard Analysis



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

Working Job Title: Power Plant Operating Engineer 1

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 Power Plant Operating Engineer 1. 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 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 multi-meters, 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

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<p>Maintain inventory supplies</p>	<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 work station 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
<p>Cell phone usage</p>	<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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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Perform internal and external cleaning of boilers, including boiler components.</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as rust, dried chemical precipitate, ash) • Confined spaces (such as steam drum, furnace, mud drum) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous chemicals (such as Aerokrilo, furnace patch, solvents) • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Noise • Overhead equipment • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Scaffolding • Work off ladders 	<ul style="list-style-type: none"> • Barricades/signs/spotter (if applicable) • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Fall protection work plan (if applicable) • 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 • If hot, drink water and take necessary rest breaks • Lockout procedure • Location of exits • Location of fire extinguisher • Location of first aid kit • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials • Tool tethering and toe boards (scaffolding) • Use temporary lighting (such as flash light, string temp lighting) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Asbestos Awareness • Audiometric Hearing Test • Back protection & Lifting Safety Online • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Confined Space Entry /Hands On • Department specific training • Ergonomic Online training (optional) • Fall Protection • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • HazCom/GHS • Hepatitis B Vaccination (must be offered) • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lead Awareness Online • Lockout/Tagout Safety • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS • Scaffold Safety • Supv LOTO Field Evaluation <p>PPE</p> <ul style="list-style-type: none"> • Dust mask -as needed • Gloves - as needed • Hard hat • Head light / temporary lighting • Hearing protection - as needed • Impact glasses/goggles – as needed • LOTO locks or tags • Personal fall restraint/arrest equipment • Substantial footwear

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Clean fuel oil guns and fuel oil systems</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as dust, odors) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Hazardous chemicals (such as solvents) • Hazardous energy (pressure (liquid lines)) • Noise • Power/Hand tools • Slip/trip/fall 	<ul style="list-style-type: none"> • 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 • Location of exits • Location of fire extinguisher • Location of first aid kit • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Department specific training • Ergonomic Online training (optional) • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • HazCom/GHS • Hepatitis B Vaccination (must be offered) • Hearing Protection/Conservation Online • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS <p>PPE</p> <ul style="list-style-type: none"> • Chemical splash goggles • Dust mask -as needed • Gloves • Hearing protection - as needed • Substantial footwear

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Assist with the operations of all boilers and all auxiliary equipment (such as combustion control equipment, fuel systems, air compressors, electrical generating equipment, water analysis equipment, fans, blowers, pumps, and turbines)</p>	<ul style="list-style-type: none"> • Compressed gasses (such as calibration gas, refrigerant leak) • Electrically energized equipment • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Noise • Overhead equipment • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Work off ladders 	<ul style="list-style-type: none"> • Aerial lift (such as scissor lift) • Avoid exposure to electrical energized equipment • Ensure work area is clear from spills and trip hazards • Fall protection work plan (if applicable) • 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 • If hot, drink water and take necessary rest breaks • Location of exits • Location of fire extinguisher • Location of first aid kit • Refrigerant leak work plan (if applicable) • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials • Use portable refrigerant monitor (operated by Lead) • Use temporary lighting (such as flashlights) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Asbestos Awareness • Audiometric Hearing Test • Back protection & Lifting Safety Online • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Compressed Gas Safety Online • Department specific training • Ergonomic Online training (optional) • Fall Protection • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • HazCom/GHS • Hepatitis B Vaccination (must be offered) • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lead Awareness Online • Lift Training • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS <p>PPE</p> <ul style="list-style-type: none"> • Gloves - as needed • Hard hat – as needed • Head light / flashlight • Hearing protection - as needed • Impact glasses/goggles – as needed • Personal fall restraint/arrest equipment • Substantial footwear

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Perform boiler chemical treatment and water treatment testing.</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as dust, refrigerant leaks, odors) • Ergonomic problems such as lifting, repetitive motion, awkward posture • Hazardous chemicals Hazardous energy (pressure -liquid lines) • Noise • Power/Hand tools • Slip/trip/fall 	<ul style="list-style-type: none"> • 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 • Location of exits • Location of fire extinguisher • Location of first aid kit • Refrigerant leak work plan (if applicable) • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials • Use portable refrigerant monitor (operated by Lead) • Water Treatment Plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Audiometric Hearing Test • Back protection & Lifting Safety Online • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Department specific training • Ergonomic Online training (optional) • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • HazCom/GHS • Hearing Protection/Conservation Online • Hepatitis B Vaccination (must be offered) • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS <p>PPE</p> <ul style="list-style-type: none"> • Chemical splash apron – as required • Chemical splash goggles • Dust mask -as desired • Gloves – as required for chemical handling • Hearing protection - as needed • Splash face shield – as required • Substantial footwear

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Assist with the maintenance and repair of power plant equipment.</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as dust, odors, refrigerant leak) • Biological hazards (such as cooling tower –legionella) • Compressed gasses (such as acetylene) • Confined spaces (such as- pressure vessels, mud drum, firebox) • Electrically energized equipment • Ergonomic problems such as lifting, repetitive motion, awkward posture • Fall hazard • Hazardous chemicals (such as solvents, degreasers, cleaners) • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Material Handling • Noise • Overhead equipment • Power/Hand tools • Regulated materials such as asbestos, lead, silica • Slip/trip/fall • Scaffolding • Work off ladders 	<ul style="list-style-type: none"> • Aerial lift • Avoid energized electrical work when possible • Barricades/signs/spotter (if applicable) • Check-in with the control room prior to work • Confined space permit (if applicable) • Ensure work area is clear from spills and trip hazards • Fall hazard work plan (if applicable) • Follow industry safety standards for operating power/hand tools • Follow regulatory practices/standards for operating forklifts • 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 • Location of exits • Location of fire extinguisher • Location of first aid kit • Refrigerant leak work plan (if applicable) • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials • Tool tethering and toe boards • Use portable refrigerant monitor (operated by Lead) • Use temporary lighting (such as flash lights) • Water treatment plan • Cooling tower work practice (employee perform Legionella self-test – as directed) 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Asbestos Awareness • Audiometric Hearing Test • Back protection & Lifting Safety Online • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Compressed Gas Safety Online • Confined Space Entry /Hands On-Department specific training • Electrical: Arc Flash Awareness Online • Ergonomic Online training (optional) • Fall Protection • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • Forklift Operator Safety • HazCom/GHS • Hepatitis B Vaccination (must be offered) • Hoisting and Rigging • Hearing Protection/Conservation Online • Ladder Safety Hands On • Ladder Safety Online • Lead Awareness Online • Lift Training • Lockout/Tagout Safety • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS • Scaffold Safety • Supv LOTO Field Evaluation <p>PPE</p> <ul style="list-style-type: none"> • Dust mask -as needed • Gloves - as needed • Hard hat – as needed • Flash light / temporary lighting • Hearing protection - as required • Impact glasses/goggles – as needed • LOTO locks or tags • Personal fall restraint/arrest equipment • Substantial footwear • Tyvek coveralls – as desired

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
<p>Power Plant rounds and collect, log and print operational data, change recording charts, and monitor fuel deliveries.</p>	<ul style="list-style-type: none"> • Airborne contaminants (such as dust, odors, refrigerant leak) • Biological hazards (such as cooling tower –legionella) • Compressed gasses (such as CEMS) • Ergonomic problems such as awkward posture • Hazardous energy (mechanical, heat, pressure (gas or liquid lines)) • Heat stress • Insufficient lighting • Noise • Power/Hand tools • Slip/trip/fall 	<ul style="list-style-type: none"> • Avoid energized electrical work when possible • Ensure work area is clear from spills and trip hazards • Follow industry safety standards for operating power/hand tools • If hot, drink water and take necessary rest breaks • Location of exits • Location of fire extinguisher • Location of first aid kit • Refrigerant leak work plan (if applicable) • Safety Data Sheets (SDS) for chemical and products • Reinforce shop safety standard operating procedures and work practices • This job position does not typically perform work on regulated building materials • Use portable refrigerant monitor (operated by Lead) • Use temporary lighting (such as flash lights) • Water treatment plan 	<p>Task Specific Training</p> <ul style="list-style-type: none"> • Asbestos Awareness • Audiometric Hearing Test • Bloodborne Pathogens for Non-Lab Online (for First Aid) • Compressed Gas Safety Online • Ergonomic Online training (optional) • Fire Extinguisher Hands On • Fire Extinguisher Online • First aid & CPR • HazCom/GHS • Hearing Protection/Conservation Online • Hepatitis B Vaccination (must be offered) • Lead Awareness Online • Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS <p>PPE</p> <ul style="list-style-type: none"> • Gloves - as needed • Flash light / temporary lighting • Hearing protection – as required • Substantial footwear