

Job Hazard Analysis



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

Working Job Title: Power Plant Operating Engineer 2 - Chemist

JHA Completed by Mark Kirschenbaum, Asst Director of Campus Utilities

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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 Power Plant Operating Engineer 2 - Chemist. 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 inspectionFollow all traffic rulesMaintain current driver's licenseReport problems with state vehicles	Task Specific Training <ul style="list-style-type: none">Driver Safety and AwarenessMonthly shop safety meetings on PPESeatbelt use policy PPE <ul style="list-style-type: none">Seatbelt
Computer work	<ul style="list-style-type: none">Eye strainErgonomic problems such as carpal tunnel and back problems	<ul style="list-style-type: none">Adequate lightingRequest on Ergonomic evaluation from EH&SReview ergonomic info on EH&S websiteTake 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

Power Plant Operating Engineer 2 - Chemist

Job Tasks	Potential Hazard	Controls & Recommendations	Training and Personal Protective Equipment
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
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 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
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

Power Plant Operating Engineer 2 - Chemist

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Handling, dosing chemicals (such as morpholine, cyclohexamine, diethaminoethanol or glutaraldehyde) and equipment maintenance.	<ul style="list-style-type: none"> • Airborne contaminants (such as chemical vapors) • Ergonomic problems (such as lifting, awkward posture) • Hazardous chemicals Hazardous energy (pressure liquid lines) • Material Handling • 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 • Follow regulatory practices / standards for operating a forklift • 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 • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • 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 • Forklift Operator Safety • 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 • Respirator training & Fit Test <p>PPE</p> <ul style="list-style-type: none"> • Chemical: splash apron, goggles, splash shield, footwear, gloves – as required • Hearing protection - as needed • Respirator – as required • Shoe covers – as required • Substantial footwear

Power Plant Operating Engineer 2 - Chemist

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
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)	<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 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"> Avoid exposure to electrical energized equipment 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 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 Shop safety standard operating procedures 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) Fire Extinguisher Hands On Fire Extinguisher Online First aid & CPR HazCom/GHS Hearing Protection/Conservation Online Hepatitis B Vaccination (must be offered) Ladder Safety Hands On Ladder Safety Online Lockout/Tagout Safety Lead Awareness Online Monthly shop safety meetings on PPE, shop safety standard operating procedures and SDS Supv LOTO Field Evaluation <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 Substantial footwear

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and
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Power Plant Operating Engineer 2 - Chemist

			Personal Protective Equipment
Power Plant rounds and collect, log and print operational data, change recording charts, and monitor fuel deliveries.	<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 • Shop safety standard operating procedures • 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) • Confined Space Awareness Online • 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

Power Plant Operating Engineer 2 - Chemist

Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Perform boiler chemical treatment and water treatment testing.	<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 • Shop safety standard operating procedures • This job position does not typically perform work on regulated building materials • Use portable refrigerant monitor (operated by Lead) 	<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, goggles, splash shield, footwear, gloves – as required • Dust mask -as desired • Hearing protection - as needed • Substantial footwear

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Job Tasks	Potential Hazard	Controls & Recommended Actions	Training and Personal Protective Equipment
Clean fuel oil guns and fuel oil systems	<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 Shop safety standard operating procedures 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 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, goggles, splash shield, footwear, gloves – as required Dust mask -as needed Gloves Hearing protection - as needed Substantial footwear