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CHAPTER 1 INTRODUCTION

A. References

[WAC 296-800-140: Accident Prevention Program](#)

[WSU SPPM](#)

B. Purpose

WSU Environmental Health and Safety's (EHS') Accident Prevention Program (APP) establishes Department policies and procedures intended to prevent workplace accidents, illnesses and injuries through effective policy. These policies support the systematic identification, evaluation/assessment, elimination and/or control of workplace hazards. To implement effective hazard controls, this policy clearly defines safety responsibilities, identifies resources for correcting or controlling hazards and outlines training requirements for personnel potentially exposed to workplace hazards.

B. Scope

This APP establishes workplace safety requirements for WSU EHS supervisors and employees. The APP chapters contained herein provide guidance for EHS personnel engaged in specific Departmental activities where hazards are present or may be encountered. EHS Supervisors and Employees are engaged in preparing each chapter. Washington Department of Safety and Health (DOSH) rules and WSU's Safety Policy and Procedures Manual (SPPM) are referenced for adherence to State rules and WSU policy.

This APP is not a static document, but is subject to regular review and revision when improvements to policies and procedures are identified. All EHS employees are responsible for a safe workplace and recommending improvements to existing policy. Employees are expected to hold themselves and their peers accountable for maintaining a safe and healthy work environment. Any employee who does not comply with the applicable safety policies and procedures, or who is negligent in his or her responsibilities will be subject to corrective and/or disciplinary action.

EHS employees have the authority to halt any departmental work activity which they believe may be an imminent threat to life, health, property, or equipment.

This APP *does not establish safety requirements for activities that are not identified in the following chapters.* EHS personnel required to engage in

activities not covered by this APP must contact the AD for OHS to develop applicable procedures and receive training and additional approvals as required.

C. Procedures

This APP establishes WSU EHS safety policy, these policies, in some instances, extend to task specific safety procedural requirements. Documentation demonstrating procedural requirements may also be required as referenced in the following chapters. Program Managers and Supervisors are expected to integrate these procedures into the appropriate work activities and employees are expected to apply them on the job.

D. Dissemination

This document is available to all EHS employees on the EHS Shared Drive and may be printed in its entirety or individual sections as desired.

E. Update Procedure

Individual sections within this document will be reviewed no less frequently than every 3 years to ensure they remain current. The OHS Assistant Director will be responsible for ensuring periodic reviews are conducted. Responsibility for conducting the individual section reviews will be assigned by the OHS Assistant Director.

CHAPTER 2 ACCIDENT PREVENTION PROGRAM GENERAL GUIDANCE AND INSTRUCTIONS

A. References

1. [SPPM 2.16, Safety Orientation](#)
2. [WSU Executive Policy 20 Alcohol and Drug Policy](#).

B. Purpose. This Accident Prevention Program (APP) provides guidance and establishes department/unit safety policy and procedures. This APP incorporates requirements established in Washington State Division of Occupational Safety and Health (DOSH) rules, and WSU's Safety Policy and Procedures Manual (SPPM).

Department/Unit supervisors are expected to integrate procedures into relevant/applicable work activities, and employees are expected to apply them on the job. Sample procedural forms are referenced in individual APP chapters and are to be used when they apply.

C. Responsibilities. DOSH rules identify employer responsibilities for employee safety. WSU's SPPM is similarly structured, identifying the departmental/unit authorities, including supervisors as the individuals responsible for employee safety. General supervisor and employee safety responsibilities are presented in Chapter 3, the following APP chapters identify specific departmental, supervisor and employee responsibilities referencing DOSH rules and WSU's SPPM.

D. New-Hire Safety Orientation. Every new Environmental Health and Safety (EHS) employee will be provided a safety orientation per [SPPM 2.16, Safety Orientation](#) and the employee's supervisor will complete the Safety Orientation Checklist. The Checklist will be submitted to the EHS Office Administrator and added to the employee file. Rehires or cyclical workers of less than six (6) months duration away from work performing substantially similar to the work previously performed need not be considered new hires except at the start of their initial cycle. If a rehire is assigned to a substantially different position and/or tasks, then a new safety orientation should be conducted. Each employee will be briefed on the contents of this APP and will be instructed to read selected safety materials directly pertaining to their assigned duties before beginning work. ***Before new employees are released to perform duties without direct supervision of a properly trained supervisor or co-worker, they must satisfactorily complete required safety training.***

New employees will also be instructed that:

1. They are to report any unsafe conditions or practices immediately to their supervisor for remediation;
2. They have authority to stop work if any unsafe conditions or practices are present until such time as they are remediated;

3. That nothing we do is so important as to necessitate the violation of standing safety practices;
4. They are not to engage in work activities without appropriately documented qualifications and training including:

- | | | |
|---|--|---------------------------------|
| • Using Chemicals | • Operating Machines or Power Tools | • Disturbing Building Materials |
| • Using PPE | • Driving WSU Vehicles or Equipment | • Managing Hazardous Waste |
| • Entering Confined Spaces | • Entering Trenches or Excavations | • Signaling or Flagging |
| • Working at Heights of 4 Feet or above | • Isolating Hazardous Energy/LOTO | • Working in Laboratories |
| • Using Ladders | • Welding, Cutting or Brazing | • Working with Pesticides |
| • Using Scaffolding | • Working with Blood/ Bloodborne Pathogens | • Responding to Chemical Spills |
| • Using Elevating work Platforms | • Working with Electricity | |

5. Employees failing to comply with safety policies and procedures will be subject to timely, corrective or disciplinary action.

E. WSU Drug and Alcohol Policy. Employees are expected to read and comply with [WSU Executive Policy #20, Alcohol and Drug Policy](#).

F. Job Class Requirements. Each classified position description includes specifications for physical and mental requirements and typical working conditions for the position. The position description identifies personal protective equipment and associated medical surveillance/monitoring requirements. Employees must possess the knowledge, skills and abilities to fulfill position description requirements and apply safety rules and procedures.

G. Emergency Preparedness.

1. Building emergency. Employees will receive instructions on what to do during a building evacuation emergency. Each building has a gathering location where, upon activation of emergency alarms, employees should gather and wait for further instructions from the person identified in charge. An evacuation map for each building and floor is posted. It shows locations of exits, fire extinguishers, first-aid kits and gathering locations outside.

2. **General Campus emergency.** In the event of a general emergency campus wide, employees will receive notification and general instructions via the campus emergency public address system or the WSU Alert network communication system. EHS employees are required to sign up for WSU Alerts, employees may select whether to receive alerts via telephone/mobile phone, text, electronic mail or any combination thereof.
3. A current copy of the EHS Department Emergency Plan is available in basement room B-19.

H. Fire Safety.

EHS employees are required to evacuate the building when a fire alarm is activated and shall not attempt to extinguish any fire unless they have received fire extinguisher training.

Upon discovering a fire:

1. Immediately notify other persons in the area. Call, or have them call 911.
2. If the fire is small (such as a wastebasket fire) and there is minimal smoke, fire extinguisher trained employees may attempt to put the fire out with an appropriate fire extinguisher. If the fire grows and/or there is thick smoke, do not continue to fight the fire and immediately evacuate the building.
3. Non-designated personnel are to immediately evacuate and go to the designated gathering area.
4. Notify your supervisor you have evacuated and are safe.

Supervisors notified of a fire are to:

1. Instruct employees to evacuate to the designated gathering area (the Arbor Trail portion located south of Grimes Way).
2. Insure all employees have been evacuated and are accounted for.
3. Verify 911 has been called.
4. Determine if the fire has been extinguished. If fire has grown or there is thick smoke, evacuate any employees attempting to fight the fire.
5. Go to the designated gathering area and verify that all the employees are accounted for. If an employee is missing, no one will be permitted to re-enter the building.
6. Notify responding firefighting personnel when an employee is missing and may be in the building.

CHAPTER 3 RESPONSIBILITIES

A. References

1. [SPPM 2.10 Accident Prevention Responsibility](#)
2. [SPPM 2.24 Accident Reporting and Follow-Up](#)
3. [WAC 296-800-110 Employer Responsibilities: Safe Workplace](#)
4. [WAC 296-800-120 & 12005 Employee Responsibilities](#)
5. [HRS Alcohol and Drug Abuse Manager Guidelines](#)
6. [Exec Policy #20 Alcohol and Drug Policy](#)
7. [Hazard Assessment Form](#)

B. Introduction

The responsibility to maintain a safe workplace, resides with each employee, for themselves, their peers and the public. That responsibility includes the elimination of hazards wherever possible, and reporting actual or potential hazards immediately upon their observation. Specific safety responsibilities are identified in this Chapter's subsequent sections and further discussed as they apply to this Accident Prevention Program (APP) chapters.

IN SITUATIONS WHERE IMMINENT DANGER OR SERIOUS HAZARD(S) EXIST(S), ANY EMPLOYEE HAS THE AUTHORITY TO CEASE WORK UNTIL THE DANGER OR HAZARD HAS BEEN CONTROLLED.

C. Directors

Directors ensure employees in their units adhere to State rules, WSU and departmental safety policy. Directors must coordinate and manage safety responsibilities with their supervisors and employees as appropriate to effectively implement safety policies. Safety performance shall be specifically addressed in position descriptions and performance evaluations.

Directors shall:

- Administer the Safety Program for their unit.
- Adopt this APP and provide input/revision as necessary to address/incorporate unique unit requirements while adhering to State rules.
- Solicits input from subject matter experts ensuring Departmental policies are aligned with State requirements.
- Ensure supervisors implement Department safety policies per this APP.
- Ensure supervisors perform and document Hazard Assessments and identify the resources necessary to provide appropriate engineering and administrative controls and/or Personal Protective Equipment (PPE) to unit personnel.

- Disseminate safety information to appropriate personnel.
- Receive and review reports, surveys, accident reports, and other information relating to safety and loss control.
- Review injury trends and establish prevention measures.
- Review and/or conduct incident investigations and inspections.
- Evaluate the need for corrections that may be necessary to remedy or improve various workplace safety concerns, allocate necessary resources and ensure the remedy is implemented and maintained.
- Ensure appropriate participation in Department Safety Committee meetings.

D. Supervisors

Supervisors ensure their employees adhere to safety policies and are provided the necessary training and resources to perform work safely. Supervisors are accountable to the director for adherence to relevant safety policies and objectives. Safety performance shall be specifically addressed in position descriptions and performance evaluations.

Supervisors shall:

- Ensure safety policies and procedures are understood and implemented by themselves and their employees.
- Promote employee participation in the health and safety program.
- Perform and document Hazard Assessments of work areas under their control and tasks performed by their employees. Hazard assessments shall identify the engineering and administrative controls and/or PPE necessary to perform work safely.
- Ensure their employees receive the required and necessary training to implement hazard controls and wear PPE.
- Require the proper care and use of PPE.
- Eliminate or control workplace hazards quickly when observed or identified to them by their employees.
- Report to the Director workplace hazards observed or identified to them by their employees that are outside their ability or require additional resources to control.
- Review injury trends and establish prevention measures.
- Submit incident reports and conduct supervisor's incident investigations when employees sustain a workplace injury or are subject to a significant near miss.
- Act to secure prompt medical attention for injured persons.
- Enforce the conditions of WSU's Return to Work policy.

E. Employees

Employees actively participate in Department health and safety programs, familiarize themselves with WSU and Departmental safety policies, and work with their supervisors and coworkers to control or eliminate workplace hazards. Employees have the right and responsibility to refuse unsafe work. Employee safety performance shall be specifically addressed in position descriptions and during

performance evaluations.

Employees shall:

- Review, understand, and adhere to State safety rules and WSU and Departmental safety policies, including this APP.
- Strive to make all work environments and operations safe.
- Report for work in good physical and mental condition to safely carry out assigned duties.
- Keep all work areas clean and free of debris and obstacles.
- Request assistance or training when unsure of how to perform any task safely.
- Correct unsafe conditions within their scope of work.
- Report observed safety and health violations, suspected violations, and anticipated hazards to his or her immediate supervisor immediately upon observation or detection. If such reported conditions are not subsequently corrected, the employee is to report the failed correction to their Supervisor or the Director for further action.
- Proactively and constructively participate in safety training.
- Pass verification testing in all mandatory safety training prior to performing work.
- Use and maintain all PPE and safety devices provided.
- Maintain and properly use all tools under his or her control.
- Assist fellow employees in implementing safety procedures and adhering to safety requirements.
- Not interfere with another employee's use of any safety device or safeguard.
- Not use intoxicating beverages or narcotics in or around the workplace or enter the workplace while under the influence of intoxicating beverages or narcotics.

E. Safety Compliance

- **Purpose:** Compliance with all safety rules and procedures is a condition of employment when working for EHS. All employees must familiarize themselves with University and Department safety policies and procedures, and comply with them in every respect. Supervisory personnel at all levels are responsible for taking immediate corrective action when an unsafe action is observed.
- **Reporting:** If non-compliant behavior or conditions are observed, or come to the attention of any employee, immediate action shall be taken to correct the non-compliant behavior or condition and the employee's supervisor shall be notified.
- **Labor and Industries Site Inspection:** If a Washington State Department of Labor & Industries Division of Occupational Safety and Health (L&IDOSH) inspector arrives at your work location in Pullman to conduct a safety and health inspection, immediately contact your supervisor who in turn will contact their chain of command and contact WSU Environmental Health & Safety (EH&S) at 335-3041. If not on site when the inspector arrives, the immediate supervisor will go to the site as soon as notified. If on site, the supervisor will remain on site while the inspector is present. EH&S serves as the L&IDOSH coordinating

liaison for WSU and will assist with the inspection process.

- **Investigation:** The supervisor shall immediately conduct an investigation and document the results.
- **Action:** Failure to comply with safety policies and procedures is to be considered serious and result in timely corrective or disciplinary action judged to be appropriate for the specific circumstances at hand. Progressive corrective/disciplinary action is appropriate for addressing non-compliance issues, recognizing that more serious offenses do not necessarily require that intermediate steps be taken first. Questions concerning appropriate corrective or disciplinary action should be addressed to the appropriate Director/Manager or Human Resource Services.

CHAPTER 4 ACCIDENTAL INJURY REPORTING

A. References

1. SPPM 2.24 Accident Reporting and Follow-Up
http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.24_Reporting_Accidental_Injuries_and_Work-Related_Illnesses.htm
2. SPPM 2.26 Investigating Accidents:
http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.26_Investigating_Accidents.htm
3. Incident Report Form
http://www.hrs.wsu.edu/forms/incident_report.aspx
4. Supervisor's Accident Investigation Report
http://www.wsu.edu/manuals_forms/PDF/SPPM/2-26-5.pdf
5. Witness/Injured Person Statement Form
http://www.wsu.edu/manuals_forms/PDF/SPPM/2-26-6.pdf
6. Motor Vehicle Safety SPPM 7.20
http://www.wsu.edu/manuals_forms/HTML/SPPM/7_Motor_Vehicle_Safety/7.20_Motor_Vehicle_Accidents.htm
7. Motor Vehicle Accident Form: <https://etort.des.wa.gov/incidentreport>

B. Purpose.

This Chapter establishes requirements, responsibilities and procedures for reporting significant near misses, incidents resulting in injury, work related illness or death and accidents involving property damage.

C. Scope.

All significant near misses, accidental injuries, work-related illnesses and accidents resulting in property damage must be reported to supervisors immediately for evaluation and investigation. WSU must report employee fatalities or in-patient hospitalizations including within eight (8) hours of the incident. WSU must report non-hospitalized employee amputations or loss of an eye within twenty-four (24) hours of the incident. Contact EH&S (335-3041) immediately after seeing to proper medical care/first aid/treatment for all major incidents. Do not disturb the scene of a major accident except to attend to the affected employee(s) and/or prevent further injury. The scene must otherwise remain intact to support WSU's and L&'s accident investigation.

Supervisors must report *any* significant near miss, accidental injury or work-related illness within 24 hours of occurrence by submitting an online [Incident Report](#). In the absence of the supervisor, it is the Manager/Director's responsibility to insure the required documentation is submitted. Procedures for reporting accidents/injuries and work related illnesses are documented in the WSU Safety Policies and Procedures Manual, section 2.24.

D. Responsibilities

Supervisors are responsible for the following:

- Immediately reporting (after ensuring appropriate treatment for injured personnel) all significant near misses, accidental injuries and work-related illnesses.
- Investigating all significant near misses, accidental injuries and work-related illnesses and completing a [Supervisor's Accident Investigation Report](#).
- Based upon the results of the investigation, taking action to prevent future incidents.
- Requiring that employees immediately report all significant near misses, accidental injuries and work-related illnesses and accidents resulting in property damage.
- Completing a Motor Vehicle Accident form when involved in a motor vehicle accident.

Employees are responsible for the following:

- Immediately reporting (after ensuring appropriate treatment for injured personnel) all significant near misses, accidental injuries and work-related illnesses.
- Taking action to prevent future incidents.
- Completes a [Witness/Injured Person Statement](#) when injured or witness to incidents.
- Completing a Motor Vehicle Accident form when involved in a motor vehicle accident.

E. Process.

1. When an injury occurs, take measures to avoid further injury, evaluate the severity of the injury, and if needed, call for emergency assistance/911.
2. Responding to an Injury Incident – SPPM 2.20 General Workplace Safety outlines injury incident response procedures for notifying EMS, rendering first aid and transporting injured person. Further information is available at: http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.20_Responding_to_an_Injury_Incident.htm
3. The supervisor conducts an incident investigation and interviews (when feasible) the employee and any witnesses involved. The supervisor then completes the [Supervisor's Accident Investigation Report](#) within 48 hours of the incident (see also [SPPM 2.26](#)).
3. Injured persons and witnesses must complete a [Witness/Injured Person Statement](#).
4. The Occupational Health and Safety Assistant Director is reviews the documents.

F. Form Distribution and Routing

After completing the online Incident Report, automated notifications and a copy of the form will be distributed to HRS, EH&S and the reporting supervisor via electronic mail. The EHS OHS Assistant Director reviews the incident report. It is the responsibility of

the supervisor to distribute a copy of the Incident Report and any submitted attachments to the affected party.

a. The OHS Assistant Director reviews the report and evaluates the severity/potential severity of incident. If a need for additional timely attention is indicated, the OHS Assistant Director will contact the supervisor to determine what corrective action has taken place or is needed.

b. If additional timely attention is not indicated, the reports will be held for review at the next Safety Committee meeting. This Committee meets bi-monthly to review incident reports, verify completion of appropriate paperwork, determine contributing causes, review recommended corrective actions, and ensure completion of the corrective action.

c. The Safety Committee may agree with the investigation and corrective action taken or may suggest alternatives.

D. Motor Vehicle Accidents - For an accident involving a motor vehicle, regardless of how minor, the driver must immediately notify her or his supervisor, Risk Management, and the Motor Pool (if a Motor Pool vehicle was involved). See SPPM 7.20 for additional information:

http://www.wsu.edu/manuals_forms/HTML/SPPM/7_Motor_Vehicle_Safety/7.20_Motor_Vehicle_Accidents.htm

1. For an accident involving a motor vehicle with injuries, the driver must also immediately notify the local area law enforcement department. Law enforcement personnel should investigate all accidents resulting in:
 - Damage costing over \$700 to motor vehicles,
 - Damage to other property, and/or
 - Injuries to individuals.
2. The driver must submit a completed State of Washington Vehicle Accident Report (SF-137) to their supervisor within 24 hours. The supervisor is responsible for reviewing this document and submitting the original to Risk Management and a copy to the Motor Pool (if Motor Pool vehicle involved) within two working days of the accident. The form is available at: <https://etort.des.wa.gov/incidentreport>
3. Supervisors are responsible for ensuring the most current version of the Vehicle Accident Report (SF-137) and post motor vehicle accident instructions are available in the glove compartment of all motor vehicles prior to use.

CHAPTER 5 ASBESTOS SAFETY

A. REFERENCES:

- WSU Asbestos Management Plan (attached)
- [SPPM 5.22 Asbestos Safety: General asbestos requirements for the University Employee](#)
- SPPM S80.80 Respirator Protection Program
http://www.wsu.edu/manuals_forms/HTML/SPPM/S80_Occupational_Health/S80.80_Respiratory_Protection_Program.htm
- [WAC 296-65-001 through 050](#) – Asbestos Removal and Encapsulation
- [WAC 296-62-077 through 07761](#) – *Asbestos, Tremolite, Anthophyllite, and Actinolite*

B. APPENDICES:

- a. Appendix A: Asbestos Management Plan

Note: Contact EHS for a copy of WSU's Asbestos Management Plan

C. PURPOSE AND SCOPE:

The policies and procedures identified herein reduce the potential for Public Safety employee exposure to asbestos hazards. This chapter establishes requirements for employees that may encounter asbestos containing building materials. The WSU Asbestos Management Plan (Appendix A) is the primary policy document for asbestos management at WSU and must be followed to meet regulatory safety and disposal requirements.

D. DEFINITIONS:

Asbestos Program Manager: An employee assigned by the Environmental Health and Safety Department (EH&S) to act as the primary asbestos resource for the university community and Competent Person for Public Safety employees. The Asbestos Program Manager maintains the WSU Asbestos Management Program.

Asbestos-containing Material (ACM): any material containing more than 1% asbestos.

Assumed ACM: Any suspect material that is not wood, metal, glass or structural concrete and has not been characterized in a "Good Faith" asbestos inspection.

Competent Person: One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them as specified in WAC 296-62-07728. For the purpose of this document, the Competent Person for EH&S is the Asbestos Program Manager.

Disturb or Disturbance: activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or assumed ACM, or generate visible debris from ACM or assumed ACM. This term includes activities that disrupt the matrix of ACM or assumed ACM, render ACM or assumed ACM friable, or generate visible dust or debris.

Good Faith Asbestos Inspection: A formal report also known as an asbestos

survey that documents the presence, location and quantity of ACM and assumed ACM at a work site. Inspections are required prior to authorizing or allowing any construction, renovation, remodeling, maintenance, repair or demolition project that may disturb building materials (WAC 296-62-07721). Reference the WSU Asbestos Management Plan for further details.

Regulated Area: An area established by the employer to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or can reasonably be expected to exceed the permissible exposure limit (PEL). Warning signs and/or tape indicating the hazard are placed at all entrances to asbestos regulated areas.

E. RESPONSIBILITIES:

Supervisors:

- Contact EHS and/or Facilities Services when potential asbestos hazards are identified to them by their employees.
- Ensure employees complete annual on-line asbestos awareness training.
- Initiate and document corrective procedures when employees do not conform to the policies herein.

Employees:

- Identify suspected asbestos hazards to their supervisor.
- Complete annual asbestos awareness training.
- Adhere to this chapter's policies.

F. TRAINING:

All Public Safety employees will receive initial hire asbestos awareness training provided online at <http://ehs.wsu.edu/asbestos/Default.aspx> and annually thereafter.

G. GENERAL REQUIREMENTS:

- All employees must report damaged building materials to their supervisor. Supervisors should contact Facilities Services dispatch at 335-9000 to create a work order to evaluate and/or repair damaged ACM as soon as practical.
- Building materials have been guaranteed not to contain asbestos in the Public Safety Building (#0875), reference Appendix B. For other buildings on campus, employees shall not disturb building materials unless the materials have been determined not to contain asbestos, as documented in a Good Faith Asbestos Inspection. Exceptions include *only* wood, metal, glass, or structural concrete constructed materials.
- The EHS Asbestos Program Manager is designated as the contact for asbestos related concerns and fulfills Competent Person duties for Public Safety personnel.
- Employees shall not enter an asbestos regulated area unless a situation poses an immediate risk (emergency) to life or health. The Competent Person in charge of

the regulated area and/or EHS Program Manager should be contacted prior to entry in non-emergency situations.

- Refer to the WSU Asbestos Management Plan (attached) for specific WSU policy and procedures regarding asbestos management and safety.

H. TASK SPECIFIC REQUIREMENTS:

Construction, Demolition, Repair, Remodeling, Maintenance or Renovation

Activities: Employees shall not disturb building materials unless the materials have been determined not to contain asbestos, as documented in a Good Faith Asbestos Inspection (excluding emergency response). All employees involved in such activities, including project managers, supervisors, leads and workers performing the work are responsible for their roles and responsibilities outlined in the attached Asbestos Management Plan.

CHAPTER 6 BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN

A. References.

- a. Occupational Exposure to Bloodborne Pathogens:
<http://apps.leg.wa.gov/WAC/default.aspx?cite=296-823>
- b. WSU SPPM S80.08 Bloodborne Pathogen Exposure Control Plan:
[Bloodborne_Pathogens.htm](#)

B. Appendices:

- a. Appendix 1 - Job Titles with reasonably anticipated exposure to blood or OPIM
- b. Appendix 2 – WSU Health Care Professional's Written Opinion for Hepatitis B Vaccination Form
- c. Appendix 3 – WSU Hepatitis B Vaccination Declination Form
- d. Appendix 4 – WSU Health Care Professional's Opinion for Post Exposure Evaluation Form
- e. Appendix 5 – WSU Health Care Professional's Opinion for Post-Exposure Follow-Up Form

C. Purpose.

This plan intends to eliminate or reduce employee's exposure to blood borne pathogens. Bloodborne pathogens are microorganisms that may be present in human blood and other potentially infectious materials (OPIM) e.g. semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures and can cause disease in humans. These include, but are not limited to, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and Human Immunodeficiency Virus (HIV).

D. Scope.

This exposure control plan covers EHS employees designated by the department as having reasonably anticipated occupational exposure to human blood or OPIM.

E. Responsibilities.

Supervisors

- Identify work activities with potential exposure to BBP or OPIM.
- Require the previously identified employees familiarize themselves with this APP chapter.
- Offer employees the HBV vaccine within 10 days of assignment to tasks with potential exposure.
- Provide employees BBP training within 10 days of assignment to tasks with potential exposure.
- Provide employees Personal Protective Equipment (PPE), for PPE selection and training information, please see this APP's PPE chapter.

- Evaluate employee adherence to BPP policy and initiate corrective action when necessary e.g. additional training and/or disciplinary action.
- Arrange for employees to visit the **emergency room** immediately after a needle stick or other suspected exposure to blood or OPIM breaking the skin barrier.

Employees

- Immediately inform their supervisor when (previously unidentified) tasks present potential BBP exposure.
- Familiarize themselves with this APP chapter.
- Receive the HBV vaccine per health care provider's recommendations, **or** sign the HBV vaccine declination form provided in Appendix 3.
- Attend and participate in BBP training.
- Wear PPE and adhere to BBP policies and procedures. Employees not conforming to BBP policy may be subject to disciplinary action.
- Visit the emergency room immediately after a needle stick or other suspected exposure to blood or OPIM breaking the skin barrier.

F. Training

Employees that may be assigned to clean-up of blood or OPIM or with a reasonable expectation of exposure must understand the contents of this APP chapter and receive BBP training upon initial employment (or within 10 days of assignment to tasks with exposure potential) and on an annual basis.

Training will include SPPM section S80.86, University BBP Safety Policies and Procedures. Training and methods will be evaluated on an annual basis to ensure best possible practices.

G. Requirements.

Employees designated as having reasonably anticipated occupational exposure to BBP are to follow the ***universal precautions***. Universal precautions are an approach to infection control where all human blood and OPIM are treated as if known to be infected with BBP.

Accordingly, employees will use appropriate PPE, work practice controls, and engineering controls to eliminate or reduce their exposure.

H. Personal Protective Equipment.

PPE provides a barrier to prevent employees from contacting human blood or OPIM. PPE is considered suitable if it does not permit blood or OPIM to pass through or reach the person's skin, personal clothing, eyes, mouth or other mucous membranes under normal conditions of use. PPE includes disposable or other suitable gloves, eye protection, face masks, CPR masks, and coveralls. Disposable gloves should be replaced every six months. Refer to APP Chapter 11 for additional information on PPE.

PPE must be worn when it is reasonably anticipated that employees may have contact with blood or OPIM.

Disposable (single use) gloves will be replaced as-soon-as possible if they are torn, punctured, or when their ability to function as a barrier is compromised. Nitrile gloves are available for employees who are allergic to latex gloves.

Reusable latex and nitrile utility gloves are also available for use, when work activities warrant additional protection. Personnel receive glove donning, doffing, inspection and decontamination training.

Splash resistant goggles and face masks must be worn whenever there is potential for splashes, spray, spatter or droplets of blood or OPIM. CPR masks or similar barriers are required when performing CPR.

I. Work Practice Controls

The following work practices are used to reduce the potential for employee exposure to BBP:

- Whenever possible, the injured person should self-administer first-aid and clean up any human blood or OPIM and contaminated waste resulting from the injury.
- Employees wash their hands with soap and running water immediately or as-soon-as possible after removing gloves and/or other personal protective equipment.
- Employees wash their hands and any other exposed skin with soap and water, or flush mucous membranes with water for fifteen minutes immediately or as-soon-as possible following contact with blood or OPIM.
- Eating, drinking, using tobacco products, applying cosmetics, or lip balm, and handling contact lenses are prohibited in areas where blood or OPIM are present.
- Employees identified in Appendix 1 *and* trained in BBP cleanup adhere to the following Spill Cleanup Procedures. All other employees promptly contact Facilities Services Dispatch (335-9000) to report blood/OPIM spills. Dispatch notifies Custodial Services who will evaluate the spill and, if possible, clean it up. If the spill is too large or in an area not served by Custodial Services, Dispatch notifies WHITCOM at 911 for assistance. Contaminated surfaces or equipment must be disinfected with either a commercially available disinfectant or a 1:10 dilution of household bleach. Diluted bleach solutions should be prepared for each use and not stored, which could affect the solution's potency.

J. Spill Cleanup Procedures

EHS personnel with job titles listed in Appendix 1 may be required to respond to blood spills. The following procedures must be followed as circumstances allow. BBP spill training should be utilized when the situation requires an adaptation of the procedure to the specific circumstance encountered.

- Obtain as much information as possible, including:
 - Spill location,
 - Area affected by the spill (materials and approximate square footage,
 - Contact person and contact information,
 - Names and contact information of other respondents.

Note: EHS personnel will not respond to cleanup spills associated with violent acts e.g. murder, suicide. EHS assistance may be requested to contain the area.

- Coordinate with other responders and obtain spill cleanup materials (see below) and arrange to meet at a location where cleanup activities can be staged.
- At least one respondent should report to the EHS building to get the appropriate cleanup materials and a response bag with PPE located in basement room B-19.
 - Gather and mix disinfectants needed,
 - Additional cleanup materials as needed:
 - Absorbent matting,
 - Brush and dust pan,
 - Sharps grabbing tool,
 - Sharps container,
 - Disinfectant,
 - Large pump sprayer,
 - Biohazard bags, and/or
 - Additional PPE.
- Report to the response site and coordinate with the contact people on-site to more thoroughly assess the situation.
- Cordon off the spill area to prevent the public from contacting the area if necessary.
- Don PPE.
- Take care to avoid spreading contamination, splashing, or aerosolizing blood or OPIM.
- If there are sharps, sweep these up with a broom and dust pan or use the sharps grabbing tool and dispose in a sharps container.
- Cover the spill with absorbent pads starting on the outside and working in.
- Saturate the absorbent pads and blood with disinfectant.
- Allow sufficient time for the disinfectant to act upon the BBP (fifteen minutes for 1:10 bleach).
- Pick the spill cleanup materials pads and place them in garbage bags.
- Wipe up all disinfectant and cleanup materials, placing them in waste bags.
- Contaminated materials that cannot be disinfected must be placed in biohazard bags and disposed as biohazardous waste. See section L. Disposal of Items Contaminated with Blood/OPIM.
- Disinfected material must be double bagged and thrown in a dumpster.
- Do not use biohazard bags for decontaminated items.

K. Engineering Controls

Engineering controls separate bloodborne pathogens from workers. The following engineering controls will be used:

- Use “grabbers” or a broom and dustpan to pick up sharp objects,
- Use long handled mops should be used to clean up liquids,
- Use barricades, caution tape, door locks, or ask others to help keep unauthorized people from entering any area potentially contaminated with blood or OPIM.

L. Disposal of Items Contaminated with Blood/OPIM

First Aid Procedures - All visibly contaminated or potentially contaminated items such as gloves, gauze and bandages will be placed and disposed of in leak proof puncture resistant containers that are marked with orange-red labels bearing the word "Biohazard" and the biohazard symbol in contrasting color. Contact Facilities Operations Waste Management at 335-9075 or 335-4530 for instructions in disposing of a biohazard bag. *Do not dispose of contaminated or potentially contaminated items or biohazard bags in regular waste receptacles.*

Each first-aid kit will be provided with a biohazard bag for disposal of visibly contaminated or potentially contaminated items such as gloves, gauze and bandages. Biohazard bags are available through WSU Central Stores (3354583).

M. Hepatitis B Virus Vaccinations

All employees covered by this plan are to be offered the Hepatitis B vaccination series after training and within 10 days from the start of tasks with occupational exposure to human blood or OPIM. The vaccinations are provided at no cost to the employee.

Employees in the bloodborne pathogen program must be evaluated by a health care professional as to their need for a hepatitis B vaccination. The WSU's Health Care Professional's Written Opinion for Hepatitis B Vaccination Form (Appendix 2) must be completed and returned to HRS within 15 days of the employee's evaluation.

Prescreening of employees (pre-vaccine blood titers) shall not be a condition for beginning the Hepatitis B vaccination series. However, Health Care

Professionals may recommend a post vaccine antibody titer (Anti-HBs) to assure the efficacy of the immunization.

Employees who decline vaccination must sign the WSU Hepatitis B Declination Form (Appendix 3) indicating they understand the risks of not receiving immunization. This decision to refuse the vaccination can be reversed at any time if the employee still has occupational exposure to bloodborne pathogens.

Employees who provide first-aid do not need to be offered the Hepatitis B vaccination until after an exposure incident. An exposure incident means a specific injection, mucous membrane or non-intact skin contact with blood or OPIM while providing first-aid. Contact EHS (335-3041) for more information.

N. Post Exposure Follow-Up

All employees who may have been exposed to human blood or OPIM should immediately wash the contaminated area with plenty of soap and running water. Employees with mucous membrane exposure should rinse with water for fifteen minutes.

The employee should seek medical attention as-soon-as possible preferably within two hours. The employee or the employee's supervisor completes the WSU Health Care Professional's Opinion for Post-Exposure Evaluation Form

(Appendix 4). The completed form is to be provided to the Health Care

Professional. The Health Care Professional is also provided and completes the WSU Health Care Professional's Opinion for Post-Exposure Follow-Up Form (Appendix 5).

An Incident Report is to be completed with the following information:

- A description of the exposed employee's job duties at the time of the exposure.
- Documentation of the routes of exposure

O. Annual Review

This exposure control plan will be reviewed annually as part of an overall safety program review, whenever necessary to reflect new or modified tasks and procedures that affect occupational exposure, and to reflect new or revised employee positions with occupational exposure.

Appendix 1 - Job Titles with reasonably anticipated exposure to blood or OPIM

- Industrial Hygienist
- Environmental Control Technician

Job Titles where some employees have a reasonably anticipated exposure to blood or OPIM

- Assistant Director

Appendix 2 - WSU's Health Care Professional's Opinion for Hepatitis B Vaccination

Instructions: As required by the Occupational Exposure to Bloodborne Pathogens Standard, Chapter 296-823 WAC the Health Care Professional is to provide a written opinion for the vaccination. Provide a copy of this completed form to the employee within 15 days of initiation of the series. The employee will supply their supervisor with a copy of form as verification of immunization status.

Employee's Name: _____

Date of Evaluation: _____

- The employee named above has received the Hepatitis B vaccination.
- Hepatitis B vaccination is indicated for the employee named above.

Health Care Professional's Name: _____

Health Care Professional's Address: _____

Health Care Professional's Telephone: _____

Health Care Professional's Signature

Date

The employing department will return a copy of this form to HRS at the address below. Please label the outside of the envelope "Confidential."

Washington State University
HRS
PO Box 641014
Pullman, WA 99164-1014
Phone: 509-335-4521

Appendix 3: WSU's Hepatitis B Vaccination Declination Form

Instructions: Employees declining the Hepatitis B Vaccination series are to complete this form and return it to their supervisor. The supervisor mails the completed form to the address below.

I understand that due to my occupational exposure to blood or other potentially infectious materials (OPIM), I may be at risk of acquiring hepatitis B virus (HBV) infection.

WSU _____ (department name) has given me the opportunity to be vaccinated with the hepatitis B vaccine, at no charge to myself.

However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If, in the future, I continue to have occupational exposure to blood or other potentially infectious materials, and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

- I have already received the hepatitis B vaccination series.
- I decline hepatitis B vaccination at this time

Employee's Name (Print)

Employee's Signature

Date

Send the completed form to HRS at mail stop 1014. Please label the outside of the envelope "Confidential."

Appendix 4: WSU's Health Care Professional's Opinion for Post-Exposure Evaluation Form

Instructions: Employee or supervisor (if employee is unable) will complete this section of the form to provide the Health Care Professional with exposure information.

- **Date, time and location of exposure:**

- **Description of employees duties during exposure:**

- **What part of the employees body (eye, mouth, finger, leg, etc.) was exposed:**

- **Routes of exposure (splash, sprayed, needle stick etc):**

- **Name and results of source individuals blood tests (or cell culture line) if available:**

- **Copy of the employee's Health Care Professional's Written Opinion for Hepatitis Vaccination:**

- **Medical records relevant to the employee may be obtained from the employees Medical Provider:**

Medical Provider Name

Address

Phone

Appendix 5: WSU's Health Care Providers Opinion for Post-Exposure Follow-Up Form

Instructions: Health Care Professional completes this section of the form. Return this form to the address below and provide a copy to the employee, within 15 days of completion of the evaluation. Please label the outside of the envelope "Confidential."

Employees Name: _____

Incident/Exposure Date: _____

Evaluation Date: _____

- The employee named above has been informed of the results of the evaluation for exposure to blood or other potentially infectious materials.
- The employee named above has been told about any health conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
- Hepatitis B vaccination is is not indicated.

Health Care Professional's Name: _____

Health Professional's Address: _____

Health Professional's Telephone: _____

Health Professional's Signature/Date: _____

Note to Health Care Professional:

WAC 296-823 Regulations: Occupational Exposure to Bloodborne Pathogens may be found at the following link:

<http://www.lni.wa.gov/WISHA/Rules/bbpathogens/HTML/HT4.htm>

CHAPTER 7 COMPRESSED GAS

A. References

1. [WAC 296-24 Part K Compressed Gas and Compressed Gas Equipment](#)
2. [WAC 296-24 Part E Hazardous Materials, Flammable and Combustible Liquids, Spray Finishing](#)
3. [Compressed Gas Association “CGA P-1: Safe Handling of Compressed Gases”](#)
4. [International Fire Code \(IFC\) Section 3004: Storage of Compressed Gases](#)
5. [IFC Section 3005: Use and Handling of Compressed Gases](#)
6. [Washington Department of Health Publication “DOH 331-364: How to Handle Chlorine Gas Safely” May 2010.](#)

B. Scope

Environmental Health and Safety (EH&S) personnel working with or around compressed gas cylinders, shall be knowledgeable of, and comply with, this chapter's requirements and the rules, policies and procedures referenced above. This chapter includes subsections that reference the following:

- A. Responsibilities
- B. Entering Laboratories and Shops with Compressed Gas Cylinders
- C. Training
- D. Guidelines for Compressed Gas Cylinders – Use
- E. Guidelines for Compressed Gas Cylinders – Storage
- F. Guidelines for Compressed Gas Cylinders – Transport
- G. Guidelines for Compressed Gas Cylinders – Emergencies

C. Responsibilities

1. Supervisor Responsibilities:

- Ensure compressed gas cylinders are inspected, used and stored per this chapters requirements, State rules and International Fire Code.
- Ensure that damaged cylinders are immediately returned to the supplier.
- Ensure an inventory and safety data sheets (SDS) are kept for all gas cylinders in their area.
- Ensure employees use appropriate personal protective equipment (PPE) when working with or around compressed gases.
- Ensure an incident response plan is in place for responding to an emergency involving compressed gasses and cylinders.
- Ensure personnel under their supervision (employees, paid and unpaid students) receive necessary training. Training shall include general safety guidelines on working with compressed gasses and compressed gas cylinders and gas specific (e.g. flammable, toxic, etc.) hazards.

2. Employee Responsibilities:

- Shall inspect, use and store compressed gas cylinders per this chapters requirements, state rules and International Fire Code.

- Shall not use gas cylinders if damaged and shall notify their supervisor of damaged gas cylinders and arrange for immediate return to the supplier.
- Shall confirm the identity of the gas before using by reading the label or other markings on the cylinder. If cylinder contents cannot be identified through the label or markings, return cylinder to the supplier without using.
- Shall not modify, tamper with, paint, obstruct, remove or repair any part of the cylinder, including the pressure relief device and the container valve or the valve protection device. It is illegal to remove or to change the prescribed numbers or marks stamped into cylinders.
- Shall use appropriate PPE as required by department/supervisor.
- Shall participate in required training before using any compressed gasses.

D. Training

WSU personnel working with or around compressed gases shall be trained at the time of hire in general compressed gas and compressed gas cylinder safety principles, including site-specific safety procedures and gas specific hazards. Training will require participants to demonstrate an understanding of the topic and proficiency using the equipment. Re-training will be required when:

- There have been changes in the workplace, such as new processes and equipment, which render previous training obsolete;
- Changes in the types of equipment that render the previous training obsolete;
- When an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the equipment.

E. Guidelines for Compressed Gas Cylinders – Use

1. Cylinders shall always be secured in an upright position to protect against falling or rolling. Valves must be closed at all times when gas is not in use. Removable valve protection caps must be fully threaded onto gas cylinders when regulators are not attached.
2. Cylinders (full and empty) must be anchored at all times to a wall or bench clamp or secured within cylinder racks or stands. An appropriate restraint device (strap or chain) shall always be used.
3. Cylinders shall be used in a secured area that is cool, dry and well ventilated and shall not be exposed to excessive dampness, salt, corrosive chemicals or fumes.
4. Gases shall not be transferred from one compressed gas cylinder to another. Do not attempt to refill gas cylinders.
5. Perform regular visual inspections of compressed gas cylinders for leaks, cracks, and deformities. Always ensure that all connections are leak tight. Each time connections are loosened and retightened each connection should be checked with a soap and water solution (oil free soap). Do not check with flame. If a cylinder is ever thought to be defective, it should be removed from service and returned to the supplier for replacement.
6. All compressed gases must be used through a pressure regulating device on the cylinder or manifold. Always use a regulator to reduce gas cylinder pressure to the

- operating pressures recommended by the equipment manufacturer. All piping and equipment must meet the standards of the Compressed Gas Association.
7. Never use regulators, gages, hoses, and other appliances for gases with different chemical properties other than those for which it was designed by the manufacturer unless the manufacturer or supplier provides information indicating that this can be done safely.
 8. Never force connections that do not fit. Threads on regulator connections or other auxiliary equipment must be the same as those on the cylinder valve outlet.
 9. Keep cylinders, valves and fittings clean. Never apply sealants (liquid or tape form) or lubricants to any cylinder valves or connection fittings. Do not use PTFE tape. Never let oil or grease contact your cylinder or its valve and fittings, especially oxygen cylinders.
 10. Oxygen regulators must be marked "Use No Oil". Regulators and fittings must meet the specifications of the Compressed Gas Association.
 11. Install flashback arrestors on both the fuel gas and oxygen cylinder regulators.
 12. Never attempt to adapt and use a fuel gas or inert gas regulator on an oxygen cylinder. A special protective device is incorporated on the oxygen regulator to harmlessly dissipate the heat caused by the recompression when the cylinder valve is quickly opened. Such a protective device is not furnished on fuel gas and inert gas regulators.
 13. Never partially open cylinder valve ("cracking" cylinder) to remove dust, dirt or debris from the cylinder inlet.
 14. Before attaching a regulator to a gas cylinder, be sure the regulator adjusting screw is fully released (backed off in a counter clockwise direction) so that there can be no flow through the regulator when the cylinder valve is initially opened. Never stand in front of a regulator when you are opening a cylinder valve.
 15. Always open the cylinder valve slowly so that gas pressure will build up slowly in the regulator (particularly in an oxygen cylinder). Quick opening of the cylinder valve causes a buildup of heat due to recompression of the gas. When combined with combustible materials, ignition and explosion may result. Never use force when opening or closing valves.
 16. When in use, cylinder valves used in the fully open position may become stuck in this open position. To prevent this ensure that the handwheel or cylinder valve key is turned back half a turn.
 17. Before removing a regulator, close the cylinder valve and release remaining pressure from regulator. Removing regulator fittings under pressure may result in serious personal injury as fittings may be ejected at high velocity.
 18. Never tamper with the safety devices on cylinders (fuse plugs, safety discs, etc.) and do not permit torch flames or sparks to strike the cylinder.
 19. Always refer to the various gases by their proper names. (Do not refer to oxygen as "air" or acetylene as "gas".)
 20. Never attempt to mix gases in a cylinder or fill an empty one from another (particularly oxygen cylinders). Mixture of incompatible gasses and/or heat caused by recompression of the gas or gasses may result in ignition and fire.
 21. Never use oxygen or other gases as a substitute for compressed air in operation of air-

- operated tools, blowing off parts, or for ventilation purposes. The only exception to this rule is where oxygen is used to blow out port passages and talcum powder or dust from welding hoses when setting up new or old “dusty” equipment.
22. Defective hoses must always be removed from service. Never repair hoses with tape. Gas hoses must meet the specifications of the Compressed Gas Association.
 23. Never use wrenches or tools except those provided or approved by the gas manufacturer. Avoid using a wrench on valves equipped with handwheels. Do not hammer on any cylinder, especially the valve wheel, in an attempt to open or close the valve. Do not tamper with the relief valves. If you have trouble, contact the supplier for assistance.
 24. Never use a hammer on the valve protection caps to loosen them. If necessary, use a piece of wood to soften the impact and prevent sparks and damage to the cap. If you have trouble, contact the supplier for assistance.
 25. Never use cylinders as rollers to move other material or as supports or for any purpose other than to contain their contents as received. Do not let cylinders bump into each other or let them fall.
 26. Do not place cylinders where they can become part of an electric circuit or might be burned by electric welding arc. Do not use them as a ground during electric welding.
 27. Always follow the manufacturer’s recommendations for setting up and operating equipment, including gas cylinder operating pressures. When in doubt about the proper handling of a compressed gas cylinder or its contents, consult the manufacturer or supplier of the gas.
 28. Repair work on cylinders, cylinder valves, gauges, and regulators must be done by qualified personnel.
 29. Wear appropriate PPE when working with compressed gases.

Acetylene Use Guidelines

- Never use acetylene in excess of 15 psi pressure. Higher acetylene pressures are dangerous. If the cylinder is not fitted with a hand wheel valve control, any special wrench required must be placed on the cylinder while the cylinder is in service. On manifolds, one wrench for each manifold will suffice.
- Always leave the fuel gas cylinder valve wrench in place when the cylinder valve is open so that it can be closed quickly in an emergency. Do not open acetylene valves more than one-quarter turn.
- All cylinders, particularly acetylene, must be restrained securely in an upright position to prevent accidents. A non-vertical position for an acetylene cylinder in use allows the discharge of acetone through the regulator, potentially clogging passages and creating a fire hazard. It also can cause voids in the porous material inside the cylinder, which can lead to acetylene explosions.
- Never use copper tubing or other copper equipment with acetylene.
- Cylinders with arc or torch burns shall be removed from service immediately.

F. Guidelines for Compressed Gas Cylinders – Storage

1. Cylinders must be stored per local, state, and federal regulations and per applicable fire codes and Compressed Gas Association (CGA) standards.
2. Names and hazard classes of the gases must be posted in the cylinder storage area.
3. Cylinders shall always be secured in an upright position to protect against falling or rolling, on a firm, level floor (ideally concrete), especially liquefied fuel cylinders in order to keep the safety devices in the vapor phase.
4. Valves must be closed with valve protection caps secured when regulators are not on the cylinders. Caps should be hand tight and not forced or over tightened.
5. Cylinders (full and empty) must be anchored at all times to a wall or bench clamp or secured within cylinder racks or stands. An appropriate restraint device (strap or chain) shall always be used.
6. Empty and full cylinders shall be stored separately with the storage layout designed so that cylinders made up of old stock can be removed first with minimum handling of other cylinders. Empty cylinders must be marked accordingly using the attached tear-off wire tag label or other suitable sign or tag or by writing "Empty" or "MT" in chalk on the cylinder. For laboratories, arrangements should be made for empty cylinders to be picked up by the supplier as soon as possible. Never try to refill a compressed gas cylinder.
7. Rotate stock of full cylinders, and use cylinders on a "first in, first out" basis.
8. Storage areas should be cool, dry, and well ventilated. Cylinders must be stored away from excessive heat sources, such as stoves, furnaces, radiators, electric welding tools, direct sunlight, and the presence of open flames. Cylinders should not be subjected to a temperature above 125 degrees Fahrenheit (52 degrees Celsius). Cylinders must be stored at least 20 feet from combustible and incompatible materials, such as oil, gasoline, or waste, and vegetation. They should not be exposed to excessive dampness, salt or to corrosive chemicals or fumes.
9. Cylinders must not be subjected to artificially created low temperatures without the approval of the supplier. Many steels undergo decreased ductility at low temperatures.
10. Cylinders must be grouped and the groups subsequently arranged by type of gas contained. Incompatible gases, such as flammable and oxidizing, shall be separated by a minimum of 20 feet or by a noncombustible barrier of at least 5 feet high having a fire resistance rating of at least one-half hour. Post "No Smoking" signs.
11. Toxic gas monitors must be installed in toxic gas storage areas and set to alarm if a release is detected. Exhausted enclosures may be required by fire code.
12. Corrosive gases shall be managed with the same precautions as toxic gases. Gas distribution systems must be gas compatible.
13. Cylinders stored outside must be protected against severe weather, tampering, combustible waste, and the ground beneath to prevent rusting. Combustible material, including vegetation, shall be kept a minimum of 20 feet from cylinders. If snow or ice accumulate on a cylinder, thaw at room temperature, or with water at a temperature not exceeding 125 degrees Fahrenheit (52 degrees Celsius).
14. Cylinders must be protected from objects that would cut, damage or otherwise

produce an abrasion in the surface of the metal. Cylinders should not be stored near elevators or gangways, or in locations where heavy moving objects may strike or fall on them.

15. Store cylinders away from heavy traffic and emergency exits. Do not store cylinders in hallways.
16. Storage, use and handling areas must be secured against unauthorized entry or access to unauthorized personnel.
17. Gas cylinders should not be stored longer than one year without use.
18. Never store liquid or gas chlorine cylinders with ammonia cylinders.

G. Guidelines for Compressed Gas Cylinders – Transport

1. Connected equipment (e.g. regulators) must be removed prior to transport. Valves must be closed to prevent internal contamination and removable valve protection caps shall be secured at all times during handling and transport.
2. Wear suitable PPE when transporting cylinders. Leather gloves and safety footwear, for example, can provide some protection against falling/slipping cylinders crushing hands or feet during moving.
3. Use a suitable hand truck or cart in good condition designed for cylinder movement with cylinder firmly secured. Avoid lifting/lowering cylinders on steps. Use ramps when available.
4. When moving gas cylinders short distances, rolling them on their bottom edges (edge-rolling) should be avoided if possible unless cylinder is on a smooth, level, firm surface. Sliding, dragging or rolling cylinders on their sides is not permitted as it causes excessive wear and may weaken cylinder walls by metal erosion.
5. Cradles shall be used for hoisting. Lifting magnets shall not be used. Ropes, chains or slings are not authorized when transporting cylinders unless provisions have been made on the cylinder for appropriate lifting attachments, such as lugs.
6. Avoid dropping and striking cylinders together. Do not drop cylinders as a method of transfer.
7. Do not lift cylinders by the cap, valves, or valve handwheels. Do not bear-hug cylinders to effect a lift.
8. Do not attempt to catch or restrain a falling cylinder.
9. Fuel gas and liquefied fuels must be stored and shipped valve end up.
10. Cylinders must be upright when they are transported in powered vehicles.
11. All cylinders with a water weight of over 30 lbs. must have caps or other protection.
12. Valve protection caps must be on cylinders at all times while transported, excluding welding gas moved about a localized work area on a specialized carrier/dolly.
13. Use freight elevator when possible. If use of a freight elevator is not possible, do not use an elevator with people on it or allow other people to ride on the elevator when transporting cylinders. When asphyxiant gases are transported in an elevator, send the cylinder up or

down by itself if at all possible but only if the elevator can be made to not stop at other floors before it is removed.

14. Do not attempt to handle cylinders if you are fatigued, physically compromised, or under the adverse influence of medication.

H. **Gas Cylinder Distribution Systems**

1. Gas cylinder distribution systems e.g. valves, regulators, tubing must be compatible with the gas conveyed by the system. Do not use grease or oil on valves or other connections carrying oxidizing gas.
2. Gas cylinder distribution systems supplying flammable, corrosive or toxic gas must be inspected regularly for leaks. Leak tests may be performed by using SNOOP or soapy water, using a gas detector, or by pressurizing the delivery system and evaluating pressure within the system over time (tightness testing). Leaks are most frequently detected at connections/fittings.
3. Flexible tubing is preferable for connections frequently detached and reconnected, e.g. between the cylinder and distribution system, regulator and distribution system and distribution system and equipment. Disconnecting and reconnecting rigid tubing can cause premature wear. Flexible stainless steel tubing options are available.
4. Gas distribution tubing passing through fire rated walls or enclosures must be sealed to maintain the integrity of the fire rating e.g. fire caulk.
5. Gas distribution tubing must be located sufficiently distant from electrical equipment such that arcing is not feasible.
6. Gas cylinder valves must be closed when gas is not in use.

I. **Guidelines for Compressed Gas Cylinders – Emergencies**

1. **Minor Leak:** If a leak or a suspected leak occurs in a gas cylinder attempt to stop the leak by tightening a valve or packing nut. If this does not work, attempt to situate cylinder so that it is in a fume hood or under local exhaust ventilation such as a canopy hood or snorkel. If this cannot be done and if it is safe to do so, immediately transport the cylinder outside of the building away from possible fire or ignition sources in a location that is free from wind currents that might carry the gas to an ignition source. If the gas is flammable, or toxic, place a sign warning against these hazards.

If it is not safe or physically possible to move the cylinder, notify those in the area and evacuate the area and/or building. Contact EH&S and notify the supplier for instructions as to the return of the cylinder. If the minor leak involves corrosive or toxic gas, notify those in the area, secure area, evacuate building, and call 911.

2. **Major Leak:** If a major leak occurs, notify those in the area, and evacuate building or area. Activate the fire alarm and call 911 when it is safe to do so. Notify the supplier for instructions as to the return of the cylinder.
3. A safety data sheet (SDS) must be readily available for each type of gas.
4. Emergency equipment, such as emergency eyewash, emergency shower, and fire extinguisher, shall be available.
5. Emergency procedures must be developed and implemented for emergency situations. Posting emergency procedures is recommended.

Note: Hydrogen gas' explosive limits range from 4% to 77% with an ignition energy of just 0.02 millijoules, hydrogen fires may be invisible.

CHAPTER 8 CONFINED SPACE

1.0 REFERENCES AND RESOURCES:

[WAC 296-809](#)

[SPPM 3.32](#)

2.0 APPENDICES:

Appendix A Confined Space Survey Summary

Appendix B Confined Space Entry Form

3.0 PURPOSE and SCOPE:

The EHS Confined Space Program establishes policy to protect employees from hazards, associated with confined space entry. A confined space must meet all of the following requirements to be subject to the requirements in this chapter:

- 1) Large enough for an employee to enter fully and work;
- 2) Limited or restricted entrance and exit e.g. tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits;
Note: Examples of limited or restricted entrance or exit include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.
- 3) Not primarily designed for continuous human occupancy.

A permit required confined space meets the above requirements *and one or more of the following characteristics*:

- 1) Contains or has a potential to contain a hazardous atmosphere;
- 2) Contains a material with the potential for engulfing someone who enters;
- 3) Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section;
- 4) Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts;
- 5) Contains any other recognized serious safety or health hazard that could either:
 - (a) Impair the ability to self-rescue; or
 - (b) Result in a situation that presents an immediate danger to life or health.

EHS employees will not enter permit required confined spaces. However, alternate entry procedures may be utilized to control hazards as described in the following sections.

4.0 RESPONSIBILITIES:

Supervisors are responsible for identifying projects and tasks subject to this chapter and verifying conditions allowing for entry into a non-permit required confined space.

Note: It is possible that in the course of assigning employees work, a supervisor may unknowingly assign employees to tasks which require confined space entry; therefore:

Employees are responsible for identifying tasks requiring confined space entry to their supervisor if encountered.

5.0 TRAINING REQUIREMENTS:

This program will provide guidance on classifying permit required and non-permit required confined spaces, along with identifying designated employee duties and use of required equipment.

- Supervisors must receive sufficient training to evaluate hazardous atmospheres and other potential hazards outlined in Section 3.0 defining a permit required confined space. Supervisors may consult with additional subject matter experts as needed to support this evaluation.
- Employees must receive sufficient training to:
 - Identify a confined space as defined in Section 3.0;
 - Understand the controls in place e.g. lock-out-tag-out (see Chapter XX) to render the space “non-permit required.”
- Facilities Services will provide protective measures such as posting signs reading; Danger-Permit Required Confined Space, DO NOT ENTER" or other similar wording, or protective measure that may include bolted covers, or locks.
- EHS personnel may be trained as attendants to assist Facilities Services personnel entering permit required confined spaces.

NON-PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURE:

The supervisor is responsible for determining if a confined space meets non-permitted conditions. Non-permit required confined spaces are identified in Appendix A. EHS OHS may be consulted if questions arise during this process. The following requirements and conditions must be met in order to classify a confined space as non-permitted:

- The confined space does not contain any actual or potential hazards or hazardous atmosphere, capable of causing death or serious physical harm. This

includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts, etc.

- Document how you determined the confined space contained no permit-required confined space hazards, including atmospheric hazards, by completing the non-permit confined space form provided as Appendix B. This form must be signed by the supervisor or a qualified individual identified by the supervisor e.g. lead.
- All employees must exit the confined space if a hazard is identified/develops.

UTILITY TUNNEL CONFINED SPACE ENTRY PROCEDURE:

Utility tunnel hazards include: pressurized steam leaks, potential burn hazards where steam pipes are exposed, heat stress, potential exposed electric wires, damaged asbestos pipe insulation and slip, trip and fall hazards. Facilities Services schedules utility tunnel inspections at least annually to identify and mitigate these hazards. Asbestos air samples are collected regularly to support tunnel work activities and document airborne fiber concentrations. Utility tunnel entry procedures include the procedures identified above for non-permit required confined space entry as well as the following:

Tunnel Inspections:

- Prior to entering the tunnel sections to be inspected, personnel evaluate exit locations, and identify preferred exits.
- Prior to tunnel entry, inspection personnel evaluate the tunnel atmosphere with a 4 gas meter (oxygen, flammability, carbon monoxide and hydrogen sulfide) and probe attachment. Based upon historic data, the utility tunnels are well ventilated, and a hazardous atmosphere is unlikely to develop; however, at least one inspection team member shall wear a 4 gas meter in utility tunnels during the inspection and shall alert the team should hazardous conditions develop. If a hazardous atmosphere is identified, do not enter the tunnel, or, leave the tunnel immediately, as applicable, and refer to this Chapter's alternative methods section. Information obtained from 4 gas monitoring shall be recorded on the completed confined space entry form provided in Appendix B.
- All tunnel entrants shall wear a bump cap (preferred) or hard hat and will carry an EHS assigned or personal mobile phone.
- All tunnel entrants shall carry a flashlight, should tunnel lighting fail.

Tunnel Work:

- The supervisor or designee identifies 2 exit locations in opposite directions from the work area. These exits are prepared e.g. manhole covers removed and above ground fall protection barricades are installed.
- Prior to tunnel entry, the supervisor or designee evaluates the tunnel atmosphere with a 4 gas meter (oxygen, flammability, carbon monoxide and hydrogen sulfide) and

probe attachment. At least one project team member shall wear a 4 gas meter in utility tunnels while work is performed and shall alert the team should hazardous atmospheric conditions develop. If a hazardous atmosphere is identified, do not enter the tunnel, or, leave the tunnel immediately, as applicable, and refer to this Chapter's alternate entry procedures section. Information obtained from 4 gas monitoring shall be recorded on the completed confined space entry form provided in Appendix B.

- All tunnel entrants shall wear a bump cap (preferred) or hard hat and have an EHS assigned or personal mobile phone.
- All tunnel entrants will carry a flashlight should tunnel lighting fail.
- The supervisor or designee evaluates ladder access and installs a ladder supporting entry and egress if: a permanent ladder is not installed, the permanent ladder is defective, or the permanent ladder is obstructed by utilities.
- The supervisor or designee evaluates the tunnel for pressurized steam leaks, potential burn hazards where steam pipes are exposed, heat stress, potential exposed electric wires, damaged asbestos pipe insulation and slip, trip and fall hazards and any other observed potential hazards. These hazards shall be recorded on the completed confined space entry form provided in Appendix B.
- Identified hazards shall be eliminated or controlled, applying engineering controls (e.g. shutting off steam to tunnel sections, repairing lights) and administrative controls (e.g. housekeeping, identifying trip hazards, exposed steel pipes, rotating out employees to reduce heat exposure) before proceeding with tunnel work. Contact the OHS AD for assistance as needed. Means for controlling these hazards shall be recorded on the completed confined space entry form provided in Appendix B.
- The supervisor or designee shall identify the 2 previously prepared exit locations to project personnel prior to their entering the tunnel.

Steam Leaks:

Small steam leaks, where a gasket has been compromised, or pinhole leaks at fittings or welds are not uncommon. These leaks do not present sufficient hazard to render the utility tunnel a permit required confined space. Small leaks, by definition, do not present a physical hazard to individuals in the vicinity. However, when identified during inspections or utility tunnel projects, a work order shall be submitted by the identifying employee or their supervisor, to repair the leak.

Large steam leaks do present a burn hazard to personnel in the vicinity and render the area a permit required confined space. EHS employees shall not enter the area until the leak is controlled. The extent of the leaks impacts must be assessed and a steam valve supplying steam to the area of concern, located outside the area of impact, shall be identified to eliminate the steam hazard before repairs are performed.

CONFINED SPACE ALTERNATIVE METHODS:

Alternate entry procedures shall be applied to all non-permit required confined spaces. EHS OHS may be consulted if questions arise during this process. The following requirements and conditions apply when entering confined spaces:

Note: To apply alternative methods, you must document monitoring and inspection information supporting the following:

- All physical hazards are eliminated e.g. lock-out tag-out, line breaking or blanking.
- The only potential or actual remaining hazard is a hazardous atmosphere. **DO NOT ENTER A CONFINED SPACE TO EVALUATE ATMOSPHERIC HAZARDS. USE A 4 GAS METER AND ATTACHED PROBE.**
- If hazardous atmospheric conditions are identified, forced air ventilation must be sufficient to control the atmospheric hazard.
- Document atmospheric monitoring data collection and applicable controls on the confined space entry form provided in Appendix B. This information must be immediately available to all entrants.

Follow these alternative methods for confined space entry.

- Eliminate any unsafe conditions before removing an entrance cover.
 - When entrance covers are removed, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.
 - Certify that pre-entry measures have been taken (such as safe removal of the cover and having protection needed to gather pre-entry data), with the date, location of the space, and signature of the person certifying. Enter this information in the confined space entry form provided in Appendix B.
 - Make the pre-entry certification (Appendix B) available before entry to each entrant.
- Before an employee enters the confined space, test the internal atmosphere with a calibrated, direct-reading instrument and probe (do not enter the space) for all of the following, in this order:
 - Oxygen content.
 - Flammable gases and vapors.
 - Potential toxic air contaminants (hydrogen sulfide and carbon monoxide).
- Provide entrants, or their authorized representatives, with an opportunity to observe pre-entry and periodic atmospheric testing.
- Ensure the atmosphere within the space is not hazardous when entrants are present e.g. continuous monitoring and forced air ventilation as necessary.
- When hazardous atmospheres are identified, use continuous forced air ventilation, as follows:

- Wait until the forced air ventilation has controlled the hazardous atmosphere before allowing entry.
- Direct forced air ventilation toward the immediate areas where employees will enter and work, and continue ventilation until all employees have left the space.
- Provide the air supply from a clean source and make sure it does not increase hazards in the space.
- Continually monitor the atmosphere within the space to ensure hazards do not accumulate.
- If a hazardous atmosphere is detected while personnel are in the confined space, do all of the following:
 - Evacuate employees from the space immediately.
 - Evaluate the space to determine how the hazardous atmosphere developed.
 - Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
 - Verify the space is safe for entry before continuing the entry operation, under a new, revised confined space entry form.

CONFINED SPACE RECORD KEEPING:

Completed entry forms shall be submitted to the OHS AD for filing and retention. The OHS AD will keep entry forms for at least one year. In some special circumstances, records may be kept for longer than the one year period. Some special circumstances include:

- There was an unauthorized entry of a permit required space.
- A new hazard was identified.
- A prohibited condition occurred.
- An injury or near miss occurred.
- There is a change in the use or configuration of the space.
- Employee complaint.

The OHS AD will monitor and assist first line supervisors in completing annual evaluations of confined space permits. This permit review will be done jointly with both parties. Annual reviews led by the OHS AD will include the following items:

- The overall confined space program.
- Individual confined space forms that were completed in the last calendar year.

The protection provided to employees entering confined spaces.

CONFINED SPACE EQUIPMENT:

Confined space atmospheres will be evaluated with a 4 gas meter and/or other direct reading instruments as necessary (whenever there is reason to suspect a hazardous atmosphere), *EHS personnel will not enter confined spaces with*

hazardous atmospheres. Engulfment sources or sources of hazardous energy and/or equipment will be locked-out (see Chapter XX) to render the space not permit required *prior to personnel entry*. All criteria in Section 3.0 defining a permit required confined space shall be eliminated *prior to personnel entry*.

Appendix A: Confined Space Survey Summary

Confined Space Survey Summary

#	Location	Space	CS	PRCS	APCS	Sign	Notes
U	General Campus	Utility Tunnels	Y	N	Y	No	Bump Caps/4 Gas Required
44	CA Steam Plant	Coal Bin #1	Y	Y	N	No	No entry required except to demo
45	CA Steam Plant	Coal Bins #3, 4 & 5	Y	Y	N	No	No entry required except to demo
38	Feed Mill	Roof Top Grain Bins	Y	Y	N	Yes	A new sign is needed
43	GW Steam Plant	Oil Tank	Y	Y	N	No	A sign is needed
1	Beef Center	Large Bin	Y	N	N	Yes	No entry required
2	Beef Center	Medium Bin	Y	N	N	No	No entry required
3	Beef Center	Small Bin	Y	N	N	No	No entry required
4	Cattle Feeding Labs	Grain Bin 1	Y	N	N	No	No entry required
5	Cattle Feeding Labs	Grain Bin 2	Y	N	N	No	No entry required
6	Cattle Feeding Labs	Grain Bin 3	Y	N	N	No	No entry required
7	Cattle Feeding Labs	Grain Bin 4	Y	N	N	No	No entry required
8	Cattle Feeding Labs	Grain Bin 5	Y	N	N	No	No entry required
9	Cattle Feeding Labs	Grain Bin 6	Y	N	N	No	No entry required
10	Cattle Feeding Labs	Grain Bin 7	Y	N	N	No	No entry required
11	Cattle Feeding Labs	Grain Bin 8	Y	N	N	No	No entry required
12	Cattle Feeding Labs	Grain Bin 9	Y	N	N	No	No entry required
13	Cattle Reproduction Labs	Grain Bin N	Y	N	N	No	No entry required
14	Cattle Reproduction Labs	Grain Bin S	Y	N	N	No	No entry required
15	Central Stores	N Filling Shed	N	N	N	NA	This operation is moving
16	Creamery	Cheese Vat	Y	N	N	Yes	LOTO from outside the space
17	Creamery	Pasteurizer Vat	Y	N	N	Yes	LOTO from outside the space

#	Location	Space	CS	PRCS	APCS	Sign	Notes
20	Dairy Center	Grain Bin 1	Y	N	N	No	Hazards controlled from outside space
25	Dairy Center	Grain Bin 10	Y	N	N	No	Hazards controlled from outside space
26	Dairy Center	Grain Bin 12	Y	N	N	No	Hazards controlled from outside space
27	Dairy Center	Grain Bin 13	Y	N	N	No	Hazards controlled from outside space
21	Dairy Center	Grain Bin 2	Y	N	N	No	Hazards controlled from outside space
23	Dairy Center	Grain Bin 8 (labeled 7 2030)	Y	N	N	No	Hazards controlled from outside space
24	Dairy Center	Grain Bin 9 (labeled 2012)	Y	N	N	No	Hazards controlled from outside space
22	Dairy Center	Grain Bins 3-6	Y	N	N	No	Hazards controlled from outside space
18	Dairy Center	Mothballed Grain Bin	Y	N	N	No	Bin is moth-balled; used for parts
28	Dairy Center	Knott Milk Storage Tank	Y	N	N	Yes	LOTO from outside the space
29	Feed Mill	L1 Elevator Leg Access Pit	Y	N	Y	No	A sign is needed
30	Feed Mill	Big Fat Tank	Y	N	N	Yes	No entry required
31	Feed Mill	South Elevator Pit	Y	N	Y	No	A sign is needed
32	Feed Mill	Weigh Hopper	Y	N	N	Yes	No entry required
33	Feed Mill	Molasses Tank (disabled)	Y	N	N	Yes	No entry required
34	Feed Mill	L2 Elevator Pit	Y	N	Y	No	A sign is needed
35	Feed Mill	Old Fat Tank (disabled)	Y	N	N	Yes	No entry required
36	Feed Mill	Outside Molasses Tank	Y	N	N	Yes	No entry required
37	Feed Mill	Sump	Y	N	Y	Yes	A new sign is needed
39	Golf Course	Backflow Preventer Pit	Y	N	N	No	
40	Golf Course	Water Meter Pit	Y	N	N	No	
41	Nat. Res. Airport Way	Water Shut-Off Valve	Y	N	N	No	
42	Nat. Res. Airport Way	Pump House	N	N	N	No	
46	Swine Center	Grain Bin 1002	Y	N	N	No	No entry required
47	Swine Center	Grain Bin 1021	Y	N	N	No	No entry required

48	Swine Center	Grain Bin 1	Y	N	N	No	No entry required
49	Swine Center	Grain Bin 2	Y	N	N	No	No entry required

CS: Confined Space **PRCS:** Permit Required Confined Space **APCS:** Alternate Procedures Confined Space

Appendix B

<p>VALID FOR 1 WORKSHIFT ONLY. ALL PERMIT COPIES MUST REMAIN AT THE SITE UNTIL JOB IS COMPLETED.</p>							
<p>Site location or description:</p> <p>Identify entry and exit points</p> <p>Entry:</p> <p>Exit:</p>							
<p>Purpose of entry:</p>							
<p>Supervisor(s) in charge of crews:</p>			<p>Unit (Plumbing, electrical, Steam Plant, etc)</p>				
<p> </p>			<p> </p>				
<p> </p>			<p> </p>				
<p>Job duration (no more than 10 hrs – new form must be completed each day):</p> <p>Issue time: _____ expiration time: _____</p>							
<p>Communication procedures (including equipment):</p> <p>Mobile phone will be used to notify unit supervisor of time of entry into the space and projected exit time. Primary communication will be direct visual and verbal communication between employees performing work.</p> <p>Additional information:</p>							
<p>REQUIREMENTS COMPLETED (Put N/A if item doesn't apply)</p>		<p>DATE</p>	<p>TIME</p>	<p>REQUIREMENTS COMPLETED (Put N/A if item doesn't apply)</p>		<p>DATE</p>	<p>TIME</p>
<p>Lockout/De-energize/Try-out</p>		<p> </p>	<p> </p>	<p>Secure Area (Post and Flag)</p>		<p> </p>	<p> </p>
<p>Line(s) Broken-Capped-Blank</p>		<p> </p>	<p> </p>	<p>Ventilation</p>		<p> </p>	<p> </p>
<p>Purge-Flush and Vent</p>		<p> </p>	<p> </p>	<p>Respirator(s) (Air Purifying)</p>		<p> </p>	<p> </p>
<p>Lighting (Explosive Proof)</p>		<p> </p>	<p> </p>	<p>Protective Clothing</p>		<p> </p>	<p> </p>
<p>Hotwork Permit</p>		<p> </p>	<p> </p>	<p>Standby safety personnel (N/A if alternate entry)</p>		<p> </p>	<p> </p>
<p>Fire Extinguishers</p>		<p> </p>	<p> </p>	<p> </p>		<p> </p>	<p> </p>

AIR MONITORING								
Substance Monitored	Permissible Levels	Monitoring Results – Record time below						
Oxygen	19.5% to 23.5%							
LEL	Less than 10%							
CO	Less than 35 ppm							
H2S	Less than 10 ppm							
Cl2	Less than 1 ppm							
Other								

Continuous Monitoring: Yes No

Performed By:

REMARKS:

SUPERVISOR AUTHORIZATION - ALL CONDITIONS SATISFIED

Print name _____ Sign name _____

Pullman Fire Department is the primary rescue per MOU.

EMERGENCY CONTACT PHONE NUMBERS:
 911 to activate Pullman Fire Dept. as per MOU.
 335-9000 to contact Facilities Operations dispatch.

Further information:

RETURN THIS FORM TO SUPERVISOR AND OHS AD UPON JOB COMPLETION.

CHAPTER 9 ELEVATING WORK PLATFORMS

References:

- A WAC Chapter 296-869 Elevating Work Platforms
<http://www.lni.wa.gov/WISHA/Rules/elevatedplatforms/default.htm>
- B WSU SPPM S30.60 Elevated Work Safety
http://www.wsu.edu/manuals_forms/HTML/SPPM/S30_Personal_Protective_Equipment/S30.60_Elevated_Work_Safety.htm

Scope.

This chapter applies to the following types of elevated work platforms:

- Aerial lifts
- Manually propelled elevating work platforms that have a platform that can't be positioned completely beyond the base
- Self-propelled elevating work platforms that have a platform that can't be positioned completely beyond the base.
- Boom-supported elevated work platforms that have a boom-supported platform that can be positioned completely beyond the base.

Purpose.

This plan specifies the types of lifts covered by this chapter; establishes responsibilities; outlines requirements for lift operation and maintenance; and establishes training (and documentation) requirements to operate, repair, or modify lifts.

Responsibilities

Supervisors

- Ensure all lifts used meet ANSI requirements (are ANSI certified);
- Ensure manufacturer's instructions/manuals are available on the lift;
- Coordinate lift training for employees and ensure employees operating lifts are trained;
- Provide lift training documentation to the OHS program manager; and,
- Ensure employees operating lifts are provided required PPE.
- Require that employees conform to this chapter's requirements.

Employees

- Attend lift training and demonstrate proficiency;

- Maintain and wear required PPE and notify their Supervisor when PPE requires replacement;
- Perform pre-start inspections and notify Supervisor of deficiencies;
- Perform workplace surveys and notify their supervisor of unsafe conditions;
- Cease operation and notify their supervisor of lift malfunctions; and,
- Understand and conform to this chapter's requirements. Non-conformance may result in disciplinary action.

Requirements:

- All lifts must meet specific ANSI design and construction requirements. To find the ANSI standard for a specific lift type, please reference [WAC Chapter 296-869 Elevating Work Platforms, Part 20005](#).
- All lifts must have manufacturer provided instructions, markings and manuals that meet appropriate ANSI requirements for the specific style of lift. Required manuals include the manufacturer's operating and maintenance manuals and a manual that defines the responsibilities of dealers, owners, lessees, users and operators.
- All Manuals must be stored in a weather proof storage compartment provided by the manufacturer, on the machine.
- Only trained and authorized personnel may operate aerial lifts.

Training:

Training must be lift specific and cover at least the following:

- General instruction on the inspection, application and operation of aerial lifts, to include recognizing and avoiding operational hazards associated
- Purpose and use of manuals, including proper storage locations of manuals on vehicle when not in use.
- Prestart inspections
- Purpose and function of controls
- Responsibilities associated with problems or malfunctions affecting the operation of the aerial lift
- Factors affecting stability
- Purpose of placards and decals
- Workplace surveys
- Safety rules and regulations pertinent to the industry
- Authorization to operate an aerial lift
- Operator warnings and instructions
- Proper use of personal fall protection equipment

Training must include having operator trainees operate the aerial lift, under the direction of a qualified person, for sufficient time to demonstrate proficiency.

Retraining is required when evaluation or observation of the operator indicates retraining is necessary.

When an individual will be using a new model or type of aerial lift, the following instruction is required before operation:

- Location of the manuals
- Purpose and function of controls
- Safety devices and operating characteristics specific to the aerial lift.

Training records must be retained for 3 years for manually propelled and boom-supported elevating work platforms and 4 years for self-propelled elevating work platforms.

Operator Prestart Inspection:

- Operators must perform a prestart inspection (see the following table).
- A qualified person must evaluate deficiencies identified during the inspection, and
- A qualified person **MUST** replace or repair all unsafe items before use. For additional requirements related to repairs and adjustments (who may perform them, manufacturer updates, and documentation) see [WAC Chapter 296-869 Elevating Work Platforms, Part 20005](#).

Operator Prestart Inspection

Component or system:	Test or inspect for the following:
Operating controls and associated mechanisms	Conditions interfering with proper operation
Visual and audible safety devices	Malfunctions
Hydraulic or pneumatic systems	Visible deterioration or excessive leaks
Fiberglass and other insulating components	Visible damage or contamination
Operational and instructional markings	That they are present and legible

Component or system:	Test or inspect for the following:
Electrical systems of or related to the aerial device	Malfunction and for signs of excessive deterioration, dirt, and moisture accumulation
Locking devices, bolts, pins, and other fasteners	That they are in-place and are not loose or deformed

Workplace Survey:

Operator must survey the area, before using an aerial lift, for hazards such as:

- Un-tamped earth fills or soft earth
- Ditches
- Drop-offs and floor obstructions
- Debris
- Overhead obstructions and electrical conductors
- Unsafe weather conditions
- Unauthorized persons in the area
- Flammable or potential atmospheres (see below)

If ANY of these hazards are present, refer to [WAC Chapter 296-869 Elevating Work Platforms, Part 20005](#), Hazardous Locations, before continuing work. Elevated lift use in most flammable atmospheres is prohibited. Including potentially flammable atmospheres resulting from leaks (e.g. flammable storage) or combustible dust.

Operating the Elevating Work Platform

Set Up.

Positioning the elevating work platform against another object to steady the platform is prohibited.

You must do the following when other moving equipment or vehicles are present:

- Take special precautions to meet the requirements of local ordinances or workplace safety standards; and
- Use warnings such as, but not limited to, flags, roped-off areas, flashing lights, and barricades.

Travel Speed

Operators must not exceed safe travel speeds for operating conditions, consider the following:

- Ground or support surface condition;
- Congestion;
- Visibility;
- Slope;
- Location of personnel;
- Other factors that may create a collision hazard or result in injury.

Driving

Operators are responsible for the following while driving with the platform elevated:

- Maintaining a clear view of the path of travel;
- Keeping a safe distance from obstacles (including overhead obstacles), debris, drop-offs, holes, depressions, ramps, and other hazards to safe travel;

Stunt driving and horseplay are prohibited.

Elevating and Lowering the Platform

Operators must perform the following tasks before elevating the platform:

- Confirm the elevating work platform is on a surface that will support the platform per manufacturer's recommendations;
- Deploy outriggers, stabilizers, extendable axes, or other stability enhancing mechanisms as required by the manufacturer;
- Ensure guardrails are installed and access gates or other openings are closed per the manufacturer's instructions;
- Confirm load and its distribution on the platform and any platform extension does not exceed the manufacturer's rated capacity;
- Ensure there is adequate clearance from overhead obstructions;
- Maintain the minimum safe approach distance (MSAD) to energized power lines and parts;
- Require that all persons on the platform wear fall protection. Prevent rope, electric cords, hoses and similar objects from becoming entangled with the platform.
- Clear the area of of personnel and equipment before lowering the platform.
- Remove all personnel from a platform that has been caught, snagged, or otherwise prevented from normal motion before attempting to free it using ground controls.

Electrical Lines:**Minimum Safe Approach Distance**

Voltage	Minimum Safe Approach Distance
Less than 300 volts (insulated lines)	3 feet (0.9 m)
Less than 300 volts (uninsulated lines)	10 feet (3.1 m)
300 volts to 50 kv	10 feet (3.1 m)
More than 50 kv	10 feet (3.1 m) + 0.4 inches (1.0 cm) for each 1 kv over 50 kv

Working From the Platform:

- Do not exceed load limits specified by the manufacturer for the boom or platform.
- Stand firmly on the platform floor and *do not*:
 - Sit or climb on the edge of the platform
 - Use guardrails, planks, ladders or any other device to gain additional height or reach.
- Prohibit wearing climbers when working from a platform.
- Make sure all persons on the platform of an aerial lift type machine wear a full body harness with lanyard attached to either the manufacturer's recommended attachment point or the boom or platform if the manufacturer doesn't specify an attachment point.
- **Never attach a lanyard to an adjacent pole, structure or equipment.**

Malfunctions or unsafe conditions:

You must make sure operators, if they suspect a malfunction of the elevating work platform or encounter any hazard or potentially unsafe condition, do all of the following:

- Cease operation.
- Report the problem or malfunction.
- Discontinue using the elevating work platform until problems or malfunctions that affect safe operation have been corrected.

Modifications:

Any modification that alters or disables interlocks or other safety devices is prohibited. You must have written approval from the manufacturer before making any modification or addition that affects the safe operation, stability, intended use, or the mechanical, hydraulic or electrical integrity of an aerial lift or elevated work platform. If the original manufacturer is no longer in business, an equivalent entity such as a national recognized testing laboratory may approve the modification. After modification the aerial lift must be as safe as it was before being modified and any change to the insulated portion of the aerial lift cannot reduce the insulating value.

Additional Requirements:

For specific requirements for Owners, Supervisors and Operators including Inspections, Maintenance/Repair, Operation and Training go to link listed under Reference "A" at the beginning of the document.

CHAPTER 10 ERGONOMICS

A. REFERENCES

SPPM 2.74 Ergonomics

http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.74_Ergonomics.htm

SPPM 2.24 Accident Injury Report Form

http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.24_Reporting_Accidental_Injuries_and_Work-Related_Illnesses.htm

SPPM 2.26 Supervisor Investigation Report

http://www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.26_Investigating_Accidents.htm

Chapter 12 – General Materials Handling and Storage

B. PURPOSE and SCOPE

Sprains and strains are among WSU's most common workplace injuries. This chapter supports the systematic reduction and elimination of workplace ergonomic hazards through early identification and mitigation. Hazard mitigation includes the following:

- Establishing clear responsibilities for identifying, evaluating and eliminating ergonomic hazards;
- Training employees to recognize ergonomic hazards and apply ergonomic principles;
- Encouraging preventative strategies; and,
- Instituting procedures sustaining the systematic identification, reduction and elimination of workplace ergonomic hazards.

C. RESPONSIBILITIES

Directors are responsible for incorporating ergonomic equipment fees/expenses, such as ergonomic chairs, materials handling equipment and computer desks into departmental budgets and funding requests.

Supervisors are responsible for the following:

- Identifying ergonomic concerns;
- Evaluating ergonomic concerns identified by employees;
- Providing or arranging for ergonomic training; and,
- Making recommendations to reduce the potential for musculoskeletal injury.

To assist with identifying potential ergonomic hazards, supervisors and employees are encouraged to request an ergonomic evaluation from the EH&S Occupational Health and Safety unit in writing.

Employees are responsible for the following:

- Attending and participating in ergonomics training;
- Applying good ergonomic practices;
- Using proper lifting techniques and equipment; and,
- Reporting ergonomic concerns to their supervisor.

Employees are also responsible for their own personal health and conditioning. Every employee should take steps to reduce their chances of back injury by addressing the following risk factors: stress, fitness, and posture. Physical conditioning influences lifting ability. Using proper strength and stretching exercises may help reduce the potential for musculoskeletal injury.

D. TRAINING

All employees shall receive information ergonomics related training and learn to apply ergonomic principles at the time of their initial safety orientation. Ergonomic principles incorporated into employee training include, but are not limited to:

- Neutral vs Awkward Postures
- Proper Lifting and the Power Zone
- Allowing Time for Movement and Stretching
- Reducing Excessive Force
- Reducing Excessive Motions
- Minimizing Contact Stress
- Reducing Excessive Vibration
- Eliminating Trip/Slip Hazards
- Providing Adequate Lighting

Any training involving new equipment or new processes will include an ergonomics discussion when appropriate. Supervisors must document all training with the EHSRMS training coordinator. Re-training will be required and documented when employees are observed using poor lifting techniques or not following ergonomic recommendations while using equipment or performing tasks.

E. PROCEDURES

Work area ergonomics will be evaluated at least annually during safety inspections. Work areas should be designed and organized to mitigate potential ergonomic hazards and reduce possible injury. Decisions affecting new equipment purchases and new work procedures will incorporate ergonomic considerations.

Employees will stop work at the first sign of pain or discomfort that may be related to an ergonomic issue (e.g. back injury or repetitive motion strain), notify their supervisor and seek medical attention if necessary. Supervisors will complete an Incident Report see SPPM [2.24](#)

and a Supervisor Investigation Report see 2.26.5. The supervisor is encouraged to request an ergonomic evaluation from the EH&S Occupational Health and Safety unit. The safety committee will evaluate and/or investigate all reported ergonomic incidents.

When workplace or procedural improvements are identified by an EHS ergonomics specialists to mitigate ergonomic hazards, the affected employee(s) and supervisor shall respond to the recommendations in a timely manner and in writing with a strategy to mitigate the identified hazards. Recommended actions may include modifying equipment and procedures or obtaining new equipment. Personal protective equipment should only be considered after engineering and administrative controls have been evaluated and determined infeasible.

Current research indicates that back belts should not be used as personal protective equipment (PPE) to prevent back injuries. Back belts have not been proven to be effective in preventing back injuries and are not considered to be personal protective equipment. Therefore, EH&S does not provide, nor encourage the use of, back belts.

Any changes to the work function that require Reasonable Accommodations for medical conditions should be coordinated through WSU-HRS.

CHAPTER 11 FALL PROTECTION

A. References

- a. SPPM, 3.34, Elevated Work Safety.
[Elevated Work Safety Personal Protective Equipment 3.34](#)
- b. SPPM, 3.34, Fall Protection Plan Form.
http://www.wsu.edu/manuals_forms/PDF/SPPM/3-34-6-7.pdf
- c. WAC 296-800-260, Floor Holes and Openings and Open-Sided Floors
<http://www.lni.wa.gov/wisha/rules/corerules/HTML/296-800-260.htm>
- d. WAC, 296-155-Part C-1, Fall Protection Requirements for Construction
<http://www.lni.wa.gov/WISHA/Rules/construction/PDFs/155c1f.pdf>
- e. WA Labor and Industries 296-155-Part C Personal Protective Equipment and Life Saving Equipment
- f. <http://www.lni.wa.gov/WISHA/Rules/construction/PDFs/155CF.PDF> WSU BPPM 90.01 Records Retention,
http://www.wsu.edu/~forms/HTML/BPPM/90_Records/90.01_Safety_Records.htm

B. Appendices

- a. Appendix A – Potential Fall Hazard Assessment
- b. Appendix B – Fall Protection Plan Form

C. Scope

This chapter establishes fall protection requirements for Environmental Health and Safety (EH&S) employees referencing the following: [WAC 296-155 Part C1 Fall Protection Requirements for Construction](#) and [WAC 296-800-260](#), Floor Holes and Openings and Open-sided Floors.

D. Responsibilities:

Supervisors:

- Inspect and evaluate all work sites for potential fall hazards, including hazards from falling objects. Fall hazards are documented and communicated referencing this chapter's requirements.
- Inspect, or designate an appropriate individual to inspect, fall protection anchors for damage and deterioration prior to each use. Fall-protection anchor devices or points are inspected referencing the inspection process noted in this Chapter's inspection section. Non-compliant anchor devices or points are identified and tagged out of service.
- Ensure all work sites with fall hazards are guarded with applicable fall protection and falling object protection.

- Ensure fall protection plans are prepared when required by a competent person with an understanding of regulatory fall protection requirements and fall protection systems.
- Communicate personal protective equipment (PPE) requirements to employees referencing this APP's PPE Chapter.

Employees assigned to a job with a fall protection plan have the authority to take immediate corrective action to eliminate employee exposure to fall hazards.

- Ensure the fall protection plan is communicated to all employees assigned to a job and enforced during work.
- Discipline personnel not adhering to the fall protection plan.
- Ensure the fall protection plan is posted on the job site until the job is completed.
- Arrange for employee fall protection training.

Employees:

- Inspect and assess all work sites for potential fall hazards, including hazards from falling objects. Review workplace-specific fall hazard assessments and when authorized, document and communicate hazards referencing this chapter's requirements.
- Inspect all fall protection anchors prior to use for deterioration and damage.
- Use an anchor point only after it has been confirmed not to be damaged, and (if the building is maintained by Facilities Services) labeled as shown in Appendix D, or approved for use as an anchor point by an authorized person.
- When authorized, prepare fall protection plans, communicate plans to employees assigned to a job and post plans on the job site.
- Acknowledge reading and understanding the fall protection plan for specific jobs.
- Use personal protective equipment (PPE) in accordance with this AAP's PPE chapter.
- Follow the fall protection plan and use the required fall protection equipment and/or system when working in the fall hazard area.
- Participate in fall protection training.

E. Training

EH&S employees identified as exposed, or potentially exposed to fall hazards receive training. Fall protection training will include the following:

- When fall protection is required;
- Basic fall protection, once at the time of hire;
- Advanced fall protection, when required to prepare fall protection plans;
- Job-specific fall-protection instructions, when assigned to a workplace with a related fall protection plan, and;

- Re-training will be required when:
 - There have been changes in the workplace, such as new processes and equipment, which render previous training obsolete;
 - Changes in the types of equipment that render the previous training obsolete;
 - When an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the equipment; and/or
 - When regulatory requirements (DOSH) change.

F. Requirements

General

All elevated workplaces of 4 feet or more, except loading docks, will be inspected and assessed for fall hazards and guarded with fall protection and inspected for hazards from falling objects. All workplaces having a fall hazard of 10 feet or more will have a written, site-specific, fall protection plan prepared, communicated to assigned employees and posted at the job site before employees begin work.

Fall Protection Work Plan

The job-specific fall protection plan shall be documented using the standard Fall Protection Plan form, provided in Appendix B. Fall protection plan documents are stored on the EHS shared drive by task or project, building and location. These plans may be modified for similar future work at the same location. The fall protection plan document shall be retained on the job site while work is in progress.

Fall Protection Anchor Point Inspection

The means, methods, and materials used to install fall protection anchor points or devices that will be used by EHS employees shall be inspected and approved for use by a competent (fall protection) person or by a WA State licensed structural engineer or architect for conformance to the requirements of: [WAC 296-155 Part C1 Fall Protection Requirements for Construction](#) and to manufacturer's installation instructions.

Appendix A - Fall Hazard Assessment

Building:
Location:
Work/Task:

Assessed By:	Date:
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Hazard	Yes	No	Systems Required
1. Parapet walls or guardrails less than 39 inches high?			See Below
2. The answer to #1 is "yes," <i>and</i> the distance from the work to the fall hazard is 15 feet or less (low slope roof).			<ul style="list-style-type: none"> a. Install permanent or temporary guardrail; b. Install 5000 lb. (fall arrest) permanent wall anchors in penthouse walls if concrete**; c. Install fall arrest permanent deck anchors; d. Install horizontal lifeline anchored with fall arrest anchors at each end and at intermediate locations if span exceeds 50 ft. e. Investigate integrity of fixed equipment to determine whether it is capable of serving as fall arrest or four times the intended load (fall restraint) anchor***. f. Encircle penthouse with long lifeline to serve as fall arrest or restraint anchor; g. Use penthouse door jamb as anchor if angle to work area is less than 30o (right or left). h. Use warning line/safety monitor system when working less than 15 ft from fall hazard. i. Use safety watch system if work can be accomplished by 1 person, no mechanical equipment will be used, and a competent person per WAC 296-155-24603 is available to serve as safety watch.

Hazard	Yes	No	Systems Required
3. The answer to #1 is “yes,” and the distance from the roof access hatch to unprotected fall hazards is less than 15 feet (low slope roof).			a. If deck is not slippery, walk directly to nearest anchor and hook up; b. If deck is slippery tie off to the access hatch ladder or stairs with padded lifeline and walk to and connect to the nearest fall arrest or fall restraint anchor; (Note: employees must not be exposed to a potential free fall of more than six feet, so an intermediate anchor may need to be installed.) c. Install horizontal lifeline running from anchor at hatch to work area anchor.
4. The answer to #1 is yes , and the distance from work area to an unguarded roof hatch is 15 feet or less (low slope roof).			a. Shut hatch cover; b. Install permanent guardrail around hatch, with spring-loaded gate; c. Install temporary guardrail around hatch; d. Use warning line/safety monitor system when working less than 15 ft. from open hatch; e. Use fall arrest or fall restraint system to prevent employee from falling down the hatch.
5. The answer to #1 is “yes,” and the distance to the fall hazard is less than 15 ft (low slope roof).			Use one of a-h in #2 above, and complete and post fall Protection work plan on inside of penthouse door or hatch cover.
6. The distance to an unguarded less than 800 pound rated skylight (low slope roof).			a. Use one of a-h in #2 above; b. Install commercial skylight fall protection screens.
7. The roof pitch exceeds 4:12			a. Use fall restraint system; b. Use Fall arrest system; c. Use positioning device system.
8. Hazardous slopes where employees are exposed to a fall 4 ft or greater.			a. Use fall restraint system; b. Use positioning device system.

*Hazardous Condition means a fall to a lower level of four feet or more.

**If fall protection systems other than guardrails or warning line systems are being used, it is assumed the employee wears a properly-fitted fall arrest harness and connects it to the fall arrest system with a shock-absorbing lanyard (ANSI Z359.1-2007 or most current). Fall arrest systems must be rigged to allow a maximum freefall distance of 6 ft so an employee will not contact lower levels see [WAC-296-155-24624, Appendix B](#).

***If fall protection systems other than guardrails, or warning line, or fall arrest systems are being used, it is assumed the employee wears a properly-fitted fall arrest harness and connects it to the fall restraint system using a non-shock-absorbing lanyard.

Appendix B - FALL PROTECTION PLAN FORM

Job Name:	Job Number:
Building:	Location:
Work Activity:	
Prepared By:	Date
<p>This document must be completed by a fall protection competent person, understanding DOSH fall protection requirements and fall protection systems available to WSU. The competent person and all EHS personnel working at heights above 10 feet have the authority to take stop work and take corrective action when workplace hazards are identified. This plan shall be implemented and posted on-site while work is performed.</p>	

Populate the following table sections with a brief description of selected controls.

Work Area Fall Hazards

Leading Edge:
Greater than 4:12 Pitch:
Roof Openings e.g. Hatch/Skylight:
Floor Opening/Edge:
Other:

Overhead Hazard Protection

Warning Signs:
Barricades:
Covered Walkway:
Fencing:
Debris Net:
Other:

Material and Equipment Handling and Storage

Tools and materials stored 6' away from edge:
Tie downs and Nets:
Loading/Unloading Method:
Other:

Fall Protection Assembly, Maintenance and Inspection

Fall protection devices and systems will be assembled, disassembled, inspected and maintained per manufacturers' instructions and as instructed by the competent person.
Other (specify):

Injured Worker Response

At minimum, 1 site worker will be CPR/First Aid trained, a first aid kit will be readily available. If worker is injured at elevation, call 911 , evaluate condition of injured worker and provide first aid if needed and safe.

CHAPTER 12 GENERAL MATERIALS HANDLING AND STORAGE

References:

1. Housekeeping, Drainage & Storage, WAC 296-800-22035
2. Exit Routes, WAC 296-800-310
3. Workplace Structural Integrity, WAC 296-800-27020
4. Materials handling and storage--Handling materials-General WAC [§ 296-24-215](#)
5. Construction Material Handling, Storage, Use and Disposal WAC [§ 296-155 part F](#)
6. Ergonomics [SPPM 2.74](#)
7. Safety Precautions for Office Workers [SPPM 2.78](#)
8. Flammable/Combustible Liquid Storage [SPPM 8.12](#)
9. Storage of Dangerous Chemical Waste [SPPM 5.68](#)
10. APP Chapter 11 Fall Protection
11. APP Chapter 10 Ergonomics

A. Purpose:

This APP chapter supports safe material handling and storage practices, intended to reduce or eliminate material handling and storage related accidents and injuries, and maintain clear routes for emergency access and egress.

B. Scope:

This chapter applies to all EH&S employees engaged in material handling and storage activities. Materials storage safety applies to the reduction or elimination of physical hazards e.g. tripping, falling, struck by object and chemical hazards e.g. flammability, corrosivity, reactivity and toxicity. This APP's Ergonomics chapter establishes requirements for reducing or eliminating ergonomic hazards associated with material handling.

C. Responsibilities:

Supervisors are responsible for the following:

- Understanding the contents of this APP chapter;
- Designating appropriate storage areas for materials under their control;
- Designating and providing appropriate storage containers when applicable;
- Identifying appropriate Personal Protective Equipment (PPE).
- Providing necessary material handling equipment to support safe material handling practices e.g. carts, dollies, drum dollies, pallet jacks;
- Training employees on the appropriate material storage locations and practices;
- Training employees on appropriate material handling practices.

Employees are responsible for the following:

- Understanding the contents of this APP chapter;
- Storing materials in designated areas;
- Storing materials in designated containers when applicable;
- Wearing PPE;

- Using material handling equipment safely e.g. carts, dollies, drum dollies, pallet jacks;
- Participating in material storage training;
- Participating in material handling training.

D. Training:

Training will be provided to employees once at the time of hire when related to the employee job classification. Re-training will be required when:

- There have been changes in the workplace, such as new processes or material handling equipment;
- Changes in the types of materials handled and/or stored;
- When an employee exhibits inadequate knowledge, skill and understanding or non-conforming practices in the safe handling and storage of materials.

Training will require participants to demonstrate an understanding of the topic and a proficiency handling and storing materials. Training information will include:

- Storing materials so they do not pose a tripping or other hazard and do not interfere with walkways or emergency egress. Emergency exit routes must be at least 7 feet 6 inches high and no projections may reduce the height from the floor to less than 6 feet 8 inches. Exit routes must be 28 inches wide minimum (or wider to accommodate occupant load).
- Storing materials so they may be accessed safely for retrieval e.g. store heavy materials lower and lighter materials higher.
- Storage capacity of shelving, cabinets, mezzanines, etc.
- Rated capacity of material handling equipment e.g. pallet jacks or powered lifts.
- Designated storage locations e.g. flammable materials storage, gas cylinder storage.
- Compatible/incompatible materials storage e.g. do not store oxidizers or reactives with flammables.

E. Requirements:

Moving, handling, and storing materials

For WSU employees moving or handling any materials for storage, please follow guidelines outlined in [SPPM 2.74 - Ergonomics](#) and this APP's Ergonomics chapter.

- Before moving materials, evaluate the pathway through which the materials will be moved and confirm the path is free from obstruction. Consider the need for assistance or use of equipment if the terrain is uneven.
- Wear appropriate PPE. If you are unsure what PPE might be appropriate,

contact your supervisor.

- When manually moving materials, seek help when a load cannot be handled safely.
- When placing blocks under raised loads, ensure the load is not released until hands and feet are clear. Blocking materials must be large and strong enough to support the load safely. Damaged materials will not be used for blocking.
- Stored materials must not create a hazard. Storage areas must be kept free from accumulated materials that may cause tripping, fires, explosions, or contribute to harboring pests. When stacking and piling materials, be aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of containers/container's compatibility with the stored materials.
- All bound material should be secured to prevent it from sliding, falling, or collapsing.
- Drums, barrels, and kegs must be stacked symmetrically. If stored on their sides, the bottom tiers must be blocked to prevent rolling. When stacked on end, put planks, sheets of plywood, or pallets between each tier to make a firm, flat, stacking surface. When stacking materials two or more tiers high, the bottom tier must be blocked on each side to prevent shifting in either direction.
- Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be shall not be exceeded.
- Gas cylinders shall be capped while moved, gas cylinder carts must be equipped to provide cylinder restraint while in transit. Gas cylinders must be capped while not in use. Oxidizing gas cylinders may not be stored within 20 feet of flammable gas cylinders unless both cylinders are in use. Toxic gas storage requires monitoring equipment or ventilated gas cylinder storage cabinets. Do not exceed fire code allowable quantities. See also this APP's Gas Cylinder chapter. For additional information contact the EHS OHS Assistant Director.
- Chemicals shall be segregated by hazard class when stored or transported. **Do not store chemicals alphabetically without first segregating chemicals by hazard class.** Flammables shall not be stored with oxidizers or reactives. Do not exceed fire code allowable quantities. For additional information reference the chemical's/product's Safety Data Sheet and/or contact the EHS OHS Assistant Director. See also this APP's Hazard Communication chapter.

CHAPTER 13 HAZARD NOTIFICATION

A. References

- a. [SPPM: 2.10, General Workplace Safety - Accident Prevention Responsibility](#),
- b. [SPPM: 2.52 General Workplace Safety – Hazard Notification](#)
- c. [SPPM: Hazard Notification Form](#),
- d. [WSU BPPM 90.01, Records Retention Schedule](#),

B. Purpose and Scope

This chapter establishes responsibilities and procedures for reporting workplace safety hazards identified by EHS personnel. Procedures for reporting safety hazards that may impact students or campus visitors are also included.

WA State Department of Labor and Industries web site provides [Hazard Alerts](#) <http://www.lni.wa.gov/safety/hazardalerts/> that highlight **emerging or newly recognized** safety or health hazards in the workplace that can cause death or serious injury or illness.

C. Responsibilities

EHS personnel observing serious safety concerns affecting or potentially affecting University employees, students or the public are to immediately contact their supervisor and the Occupational Health and Safety (OHS) assistant director.

Hazards that can be addressed immediately and the corrective action is within the employee's ability, job description and training shall be resolved and reported by the employee. Hazards that cannot be immediately address shall be appropriately isolated and/or demarcated to prevent employees, students or the public contacting the hazard.

Personnel are to report all safety hazards to the EHS OHS assistant director and safety committee, using the [Hazard Notification form](#). For hazards requiring resolution by Facilities as a maintenance request, the OHS assistant director or their designee (e.g. via assignment or backup while away from work or working out of office) completes a myFacilities request for maintenance and communicates the appropriate urgency. Hazards requiring new equipment or furniture or new construction will be added to the Minor Capital Safety requirement list and prioritized accordingly.

The unit responsible to address the safety hazard completes "Corrective Action" portion of the Hazard Notification form.

D. Reporting Process

Workplace Hazards

Employees observing serious safety concerns affecting or potentially affecting the safety of themselves or WSU personnel in their workplace are to:

- Immediately inform the work-unit supervisor and/or manager/director;

- Should the hazard result in an accidental injury, work related illness OR a significant near miss submit an incident report per the Safety Policies and Procedures Manual [S25.20](#);
- Upon review by the supervisor and a determination that corrective action cannot be implemented by the supervisor's work unit, the workplace hazard shall be documented using the [Hazard Notification form](#).
- The Supervisor will notify the EHS Safety Committee of the hazard for evaluation. The Supervisor should report the concern to the OHS assistant director.

Public Hazards

The Environmental Health and Safety (EH&S) Department is responsible for investigating and initiating and/or coordinating corrective action for all reported public hazards.

Employees observing serious safety concerns affecting or potentially affecting the safety of the general public using University facilities shall:

- Immediately contact their supervisor, the unit administrator, and the OHS assistant director.
- Follow the hazard notification procedure required in [SPPM: 2.52, Accident Prevention](#).
- Complete and submit the [Hazard Notification form](#).

Contractor Caused Hazards

Employees observing serious safety concerns that may affect University employees created by building or construction contractors should report the concern to Environmental Health and Safety; telephone 335-3041 and to their work-unit supervisor and/or manager/director.

CHAPTER 14 HAZARD COMMUNICATION PROGRAM

A. References

- a. [WAC 296-901 Hazard Communication](#)
- b. [WAC 296-800-180 Material Safety Data Sheets](#)
- c. [EH&S Safety Data Sheets](#)
- d. [SDS Request Form](#)
- e. [SPPM 5.10 Chemical Hazard Communication Program](#)
- f. [EH&S Chemical Safety](#)
- g. [SPPM 5.66 Recycling or Disposal of Chemical Wastes](#)

B. Appendices

- a. Appendix A: Glossary
- b. Appendix B: Globally Harmonized System (GHS) Pictograms

C. Scope

This chapter covers the requirements for chemical hazard communication where EH&S, as an employer, provides information to employees about the hazardous chemicals to which they are exposed. The chemical hazard communication includes labels and other forms of warning, safety data sheets (SDS), information and training.

D. Responsibilities

Hazard Communication Program Manager

The EHS Occupational Health and Safety Hazard Communication Program Manager is responsible for the following:

- Developing this written hazard communication program; and,
- Maintaining a list of workplace hazardous chemicals and SDS for EHS workplace hazardous chemicals on the EHS server.

Supervisors

Supervisors are responsible for the following:

- Obtaining and providing SDS to the Hazard Communication Manager;
- Ensuring workplace hazardous chemicals are labeled per this chapter's requirements;
- Understanding this chapter's requirements; and,
- Ensuring employees receive hazard communication training including the contents of this chapter.

Employees

Employees are responsible for the following:

- Informing their supervisor when workplace hazardous chemical labels are damaged or otherwise inadequate;
- Contacting their supervisor as needed for assistance interpreting SDS; and,
- Understanding this chapter and participating in hazard communication training.

E. General Policy

The EH&S OHS Hazard Communication Program Manager has overall responsibility for the program. A copy of this program and the safety data sheets (SDS) are readily available on the EHS server.

Hazard Communication Standard Summary

The Hazard Communication Standard is based on a simple concept - employees have both the need and right to know the identities and hazards of the chemicals they are potentially exposed to when working. Employees also need to know what protective measures are required. This knowledge should reduce work-related injuries and illnesses caused by chemical exposure.

The Hazard Communication Standard establishes uniform requirements incorporating the Globally Harmonized System of Classifying and Labeling Chemicals (GHS) to assure that the hazards of all chemicals imported, produced or used in U.S. workplaces are evaluated. The hazard information and associated protective measures are to be transmitted to affected employers and potentially exposed employees.

Chemical manufacturers and importers must convey the hazard information they learn from the evaluations to employers by labels on containers and SDSs. All covered employers must have a hazard communication program to convey this information to their employees through container labeling, SDSs, information and training.

Chemical Inventory List

The EH&S OHS Hazard Communication Program Manager will maintain a list of the hazardous chemicals used by the EHS employees or known to be present in the department's buildings and update the list as necessary on the EH&S server. The list will be updated immediately upon receipt of any newly acquired chemical(s). The identity of each chemical on the list must match the product identifier on the container label and on the SDS. The inventory tracking list must include the following information for each chemical: product identifier on the container label, manufacturer name and attached SDS file (or link to it). Optional items may include: unit name that is primary user of chemical and building name where chemical is located. The unit supervisor will determine the required tracking items beyond the mandatory items listed above. The inventory tracking list will be maintained off the EH&S server under the SDS Tracking list.

F. Container Labeling

The unit supervisor is to ensure all primary and secondary containers of hazardous chemicals in their area are properly labeled. Labels on containers from the manufacturer or distributor are to list the following six items:

1. Product Identifier (Identity of the hazardous chemical(s) on a label or SDS);
2. Signal Word (Danger or Warning);
3. Hazard Statements;
4. Pictograms (see Appendix 2);
5. Precautionary statements; and
6. Name, address and telephone number of the chemical manufacturer, importer, or other responsible party.

All secondary containers are to be labeled, tagged or marked upon transfer of the product to the secondary container by the person handling the product.

Information on secondary labels must include, at

minimum, the product identifier and hazard information from the manufacturer's label and/or SDS.

Additional information from the six items listed above may be used as necessary to enhance hazard communication. Information not on the label must be conveyed to the employee(s) through information and training.

CHEMICAL NAME _____	HAZARD KEY 4-SEVERE 3-SERIOUS 2-MODERATE 1-SLIGHT 0-MINIMAL
MSDS # _____	
<input type="checkbox"/>	FIRE HAZARD
<input type="checkbox"/>	HEALTH HAZARD
<input type="checkbox"/>	INSTABILITY
REMARKS: 	
MANUFACTURER: _____	
PHONE: _____	

If manufacturer provided labels are not available for the secondary containers, all units shall utilize a label which meets the requirements of the Hazard Communication Standard for secondary containers as described in the previous paragraph. Labels utilizing the National Fire Protection Association (NFPA) or Hazardous Materials Identification System (HMIS) hazard rating system may be used (example above and to the right). It shall be noted that this style of label by itself does not meet the requirements of the Hazard Communication Standard, therefore any additional information on the chemical substance must be conveyed to the employee through information and training. For labeling assistance see the unit supervisor or refer to WAC [296-901-14012](#).

G. Safety Data Sheets (SDS)

A SDS (formerly referred to as MSDS and now structured differently for compliance with the Globally Harmonized System of Classification and Labeling of Chemicals, or GHS) is any printed or written document obtained or developed by the chemical manufacturer or importer for use by the end user of the product. The SDS must follow the specific content as described in WAC [296-901-14014](#). The SDS must include all 16 Sections as outlined in the Hazard Communication Standard.

Chemicals Encountered in EH&S Controlled Areas

For chemicals stored or used in EH&S controlled areas, the unit supervisor is responsible for obtaining and documenting the SDSs on the EH&S server. The unit supervisor shall confirm that appropriate SDSs are present.

Chemicals Encountered in Laboratories or Shops

Routine activities (such as lab inspections or safety consultations) will require EH&S personnel to work among hazardous chemicals either in storage or in use. Lab personnel, specifically Principal Investigators (PIs), are responsible for obtaining SDSs for all chemicals in their respective labs. Therefore the EH&S personnel do not need to have immediate access to those SDSs in order to enter the laboratory or shop. However, those SDSs shall be readily available on request to lab personnel.

Obtaining SDSs

SDSs may be obtained by contacting the manufacturer or supplier, searching the internet, visiting the Environmental Health and Safety and Risk Management website (www.ehs.wsu.edu) or by following the procedures in the Safety Policies and Procedures Manual ([SPPM 5.10](#)).

Communicating SDSs

The unit supervisor is responsible for reviewing incoming SDSs for safety, health and employee protection information and conveying any new information and training to affected employees. If there are questions or concerns, the unit supervisor shall be available for assistance.

Documenting SDSs

SDSs will be documented and be available to all employees during their work shift for review via online access to the EH&S server. For those employees without computer access, the unit supervisor will inform employees how they may obtain SDS information and provide it to them upon request. If so requested by the employee, the supervisor is responsible for obtaining a printed copy. If SDSs are not available, immediately contact your supervisor. Refer to this Chapter's Employee Exposure Records section for additional information.

For more information on SDSs refer to WAC [296-901-14014](#).

Employee Information and Training

All employees will receive training on the Hazard Communication Standard, including updated labels and SDSs affected by GHS, upon initial employment. The unit supervisor is responsible for organizing employee Hazard Communication training. Training will be conducted by a person knowledgeable and competent in the topic (the supervisor is responsible for determining the competent person for providing this training in their unit).

Prior to starting work, employees using, or potentially exposed to, hazardous chemicals receive initial training on the Hazard Communication Standard and the safe use of those chemicals. Additional training shall be conducted when a new chemical hazard is introduced into the workplace and as needed. Training will be conducted before employees use or work in the vicinity of a hazardous chemical. Employee training is to be documented by recording the employee names, and the date and content of the training. See APP Chapter 30 – Safety and Health Training for instructions on documenting the training records.

The following training and information is provided to each employee covered by this program:

1. A summary of the Hazard Communication standard and the purpose, location and availability of the written program, the list of hazardous chemicals, and associated SDSs. A summary of the standard is at the beginning of this chapter.
2. Information identifying any operations in employee work area where hazardous chemicals are present.
3. Information and training on reading chemical labels and reviewing SDSs to obtain appropriate hazard information. The glossary at the end of this program lists some common SDS terms.
4. Information and training on the physical and health hazards and/or any other hazards of the chemicals in the work area, including the likely symptoms or effects of overexposure. The glossary at the end of this program lists some common physical and health hazard terms.
5. Training on the methods and observation techniques used to determine the presence of a hazardous chemical release. Detection methods may include monitoring devices, visual appearances or odor.
6. Training on the measures the department has implemented to minimize employee exposure to hazardous chemicals. These measures may include engineering controls, specific work practices employees must follow and the use of personal protective equipment to minimize chemical exposure.
7. Training on the emergency procedures to initiate in the event an employee is exposed to a hazardous chemical.
8. Training on the procedures required for cleaning up chemical spills.

If an employee has been exposed to a hazardous chemical refer to the "Chemical Exposure Incident Procedure" section of this program for instruction.

For more information on Employee Information and Training, refer to WAC [296-901-14016](#).

Entering Laboratories

EH&S personnel can potentially be exposed to hazardous chemicals when entering research or teaching laboratories while providing services. See APP Chapter 17 – Laboratory Safety.

EH&S personnel are to review signs posted at the entrance of the laboratory for information about potential hazards and the appropriate protective measures. Some laboratories should not be entered without an escort from the respective laboratory or department (i.e. active laser laboratory).

Supervisors and employees are encouraged to directly communicate with laboratory personnel for additional information about potential hazards and protective measures.

Chemical Spills

EH&S employees, not specifically trained in incident response/spill clean-up can clean-up chemical spills ONLY when all of the following conditions are met:

- The spill is located within the employees normal work area.
- The chemical is known and the spill can be cleaned-up in 15 minutes or less.
- Employees are trained to safely clean-up small chemical spills.
- Employees can wear the same personal protective equipment that they wear during normal work activities in which the chemical is handled.

- Appropriate clean-up supplies are readily accessible.
- The chemical does not have a Ceiling Limit listed in [WAC 296-841](#) and cannot create an Immediate Danger to Life and Health (IDLH) atmosphere. IDLH information can be found in the [NIOSH Pocket Guide to Chemical Hazards](#).
- Clean-up materials are disposed of per SPPM [5.66](#).

If any of the above conditions cannot be met, then immediately call 911 and qualified emergency response personnel will respond to clean-up the spill.

Only specially trained EH&S personnel can clean-up spills in campus buildings where these conditions are not met or where the spill involves mercury. See Chapter 29, Chemical Spill Response.

Personal Protective Equipment (PPE)

Supervisors are to perform hazard assessments for each work task to evaluate whether hazards, including *chemical hazards*, are present, or are likely to be present, requiring the use of engineering controls, administrative controls, and/or PPE (see [SPPM 3.10](#)) and APP Chapter 24 – Personal Protective Equipment.

Supervisors are responsible for evaluating chemical hazards, selecting suitable, properly fitting PPE and ensuring that staff are properly informed and trained on the use of selected PPE using information from the SDSs, container labels and other resources as necessary per [SPPM 3.10](#) and the EH&S Personal Protective Equipment SOP. See APP Chapter 24 – Personal Protective Equipment.

Employee PPE training shall be documented.

Building Occupants

Non-EHS building occupants may work within and around EHS workplaces while EHS is working on specific projects which may include the use of hazardous chemicals. The project supervisor will inform building occupants of hazardous chemicals used by EHS, the availability of SDSs and any required protective measures. This notification will take place prior to the start of a project and as needed during the life of the project.

On-Site Contractors

Contractors (e.g. Facilities Services, outside contractors), in the course of their work, may use hazardous chemicals in EHS employees' vicinity. The unit supervisor will request SDSs for chemicals used by contractors. Contractor SDS's will be made available to EHS employees.

Hazardous Non-Routine Tasks

Periodically, employees may be required to perform non-routine tasks involving hazardous chemicals. Prior to starting work on any non-routine task the supervisor or designee will conduct a PPE hazard assessment and provide affected employees with the following information and training:

1. The specific hazards related to the non-routine tasks
2. Protective measures required
3. Steps the department is taking to reduce chemical hazards
4. Emergency procedures
5. How to procure, use and maintain PPE as determined by the PPE hazard assessment

Hazardous Substances in Unlabeled Pipes and Process Equipment

Employees required to work on or near unlabeled pipes and/or process equipment will be informed of the substances in the pipes and/or process equipment (or substances that can be reasonably expected to be present), potential hazards and protective measures. If you encounter equipment or piping where you are unsure of the contents, contact your supervisor for guidance.

Chemical Exposure Incident Procedure

In the event an employee may have been overexposed (inhalation, ingestion, injection, or skin contact) either accidentally or possibly to a hazardous chemical, after the necessary medical care has been provided, the supervisor must complete an "Incident Report" form (see [SPPM 2.24](#)). The following information should be included on the form: the specific chemical(s), the duration of the exposure, the type of exposure (inhalation, ingestion, injection, or skin contact), and personal protective equipment used. Environmental Health and Safety retains this form for 30 years post-employment as an employee exposure record.

Employee Exposure Records

WAC [296-800-180](#) defines SDSs as employee exposure records, which must be preserved for at least 30 years post-employment. The SDSs for chemicals no longer used by EHS or chemicals which are used but no longer produced shall be retained and maintained for 30 years by EH&S, including MSDSs for chemicals ceased being used or produced before the June 1, 2015 transition to the SDS format compliant with WAC 296-901. The unit supervisor is responsible for updating the last known date of use in the department's record on the EH&S server in order to track this requirement.

Appendix 1: Glossary

Carcinogen: a substance or agent which induces cancer or increases its incidence

Chemical: means any substance, or mixture of substances.

Classification: means to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

Common name: means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

Corrosive: A chemical that produces destruction of skin tissue, namely, visible necrosis through the epidermis and into the dermis

Flammable Liquid: A liquid having a flash point of not more than 93°C (199.4°F). Flammable liquids with a flash point >140°F and ≤199.4°F are identified as “combustible liquids” on the SDS and label.

Flashpoint: The minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid .

Hazard category: means the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard class: means the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

Hazard statement: means a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical including, where appropriate, the degree of hazard.

Hazardous Chemical: Any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

Health Hazard: A chemical which is classified as posing one of the following hazardous effects: Acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in WAC 296-901-14022, Appendix A-Health hazard criteria.

Irritant: A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by a chemical action at the site of contact.

Label elements: means the specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

LEL, or LFL: Lower Explosive Limit, or Lower Flammable Limit, of a vapor or gas; the lowest concentration that will produce a flash of fire when an ignition source is present.

Oxidizer: A chemical that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

PEL: Permissible Exposure Limit. Amount of a substance that a person may be exposed over a period of time, usually expressed in fifteen minute and eight hour limits. (OSHA and/or WAC specific)

Physical Hazard: A chemical that is classified as posing one of the following hazardous effects: Explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas. WAC 296-901-14024, Appendix B-Physical hazard criteria

Pictogram: means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

ppm: Parts per million is the concentration of a gas or vapor in air - parts (by volume) of the gas or vapor in a million parts of air.

Precautionary statement: means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

Pyrophoric: A chemical that will ignite spontaneously in air at a temperature of 130 degrees F or below within five minutes after coming in contact with air.

Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Specific Gravity: A chemical that is weighed against the weight of an equal volume of water. If a material cannot be dissolved and floats on water it has a specific gravity less than one. If the number is greater than one it will sink.

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

TWA: Time Weighted Average

UEL, or UFL: Upper Explosive Limit, or Upper Flammable Limit of a vapor or gas; the highest concentration that will produce a flash fire when an ignition source is present.

Vapor Density: The weight of a vapor or gas compared to the weight of an equal volume of air. Materials lighter than air have vapor densities less than 1.0. Materials heavier than air have vapor densities greater than 1.0.

Water-Reactive: A chemical that will react to water to release a gas that is either flammable or presents a health hazard.

Work area: means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

CHAPTER 15 HEAT STRESS PROGRAM

A. References

1. [Washington State L&I Outdoor Heat Exposure \(Heat Stress\)](#)
2. [EH&S Outdoor Heat Stress Program](#)
3. [EH&S Training Factsheet - Heat Related Illness](#)
4. [SPPM 3.10 General Requirements for Personal Protective Equipment](#)
5. [WAC 296-62-095 Outdoor Heat Exposure \(Note: Links from 266-62-09510 through 266-62-09560 are Available from this Link and are Relevant\)](#)
6. [DOSH Directive 10.15 - Outdoor Heat Exposure Enforcement Procedures](#)
7. <http://www.lni.wa.gov/safety/topics/atoz/heatstress/default.asp>
8. <http://apps.leg.wa.gov/WAC/default.aspx?cite=296-62-09013>

- B. Purpose and Scope:** This Chapter promotes the reduction and elimination of employee heat related illness. Hot work environments effects upon workers are reduced using engineering controls (coolers/fans), administrative controls (training, employee rotation and breaks with access to cool drinking water) and personal protective equipment (cooling vests).

This Chapter applies when employees are exposed to outdoor or indoor temperatures while wearing the clothing identified in the following table:

Clothing & Temperature Action Levels	
Non-breathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52° F ¹
Double-layer woven clothes including coveralls, jackets and sweatshirts	77° F
All other clothing	89° F

Note: 1. Heat related illness may result at temperatures below the action levels when employees have not acclimatized to sudden and significant increases in temperature and humidity and/or are wearing PPE while engaged in rigorous activity. Supervisors and employees should monitor for signs and symptoms of outdoor/indoor heat related illness when there is a significant and sudden increase in temperature and/or while engaged in rigorous activity.

C. Responsibilities

Supervisors are responsible for the following:

- Providing readily accessible cool (potable) drinking water for employees when the criteria in the table above apply. A full shifts drinking water need not be available at the beginning of the work shift, but may be replenished throughout the day. Access to drinking water in a building is sufficient.

- Encouraging employees to frequently consume water or other acceptable beverages to ensure hydration.
- Training employees upon the signs, symptoms and appropriate response to heat related illness.

Employees are responsible for:

- Monitoring their own personal factors for heat related illness and consuming water or other acceptable beverages.
- Attending and participating in heat stress training.
- Immediately reporting their own symptoms of heat related illness or the observed symptoms of coworkers to their supervisor.

D. Training Requirements

All employees and supervisors are required to participate in annual training for heat stress and extreme temperature working conditions, including the signs and symptoms of heat related illness.

E. Evaluating and Controlling Heat Stress Factors

- In addition to high temperature, supervisors should evaluate other potential heat stress factors. These factors include:
 1. Radiant Heat (Example: Reflection of heat from asphalt, rocks, or composite roofing material, work in direct sunlight, hot pipes, mechanical rooms)
 2. Air Movement (Example: Wind blowing and temperature above 95° F)
 3. Conductive Heat (Example: Operating orchard tractor for mowing)
 4. Workload Activity and Duration (Examples: Hand sawing, digging with a shovel)
 5. Personal Protective Equipment (Examples: Wearing a respirator, chemical resistant suit and gloves for pesticide application, or leathers and gloves for welding)
- Supervisors should attempt to control heat stress factors when feasible. Controls to consider include:
 1. A heat stress checklist at the start of work that considers factors affecting heat stress such as:
 - Ambient temperature, humidity and forecast
 - Wind speed
 - Sun/heat reflection and re-radiation
 - Location(s) of hot machinery
 - Estimated length of job and work effort
 - Location of nearest potable water
 - Indoor room temperature and humidity in mechanical room, steam tunnel, I.T. closet, etc.
 - Required PPE
 2. Taking breaks in a shaded area (building, canopy and under trees)

3. Starting the work shift early (when daylight begins) and ending the shift early and/or not working outside during the hottest part of the day.
4. Removing personal protective equipment such as respirators, chemical resistant clothing and gloves, and welding leathers during breaks

F. Procedures for Responding to Heat Related Illness:

1. Supervisors must promptly respond to heat-related illness. The table below summarizes the types of heat-related illnesses, signs and symptoms and specific first aid and emergency procedures. The information must be understood at all work sites where high heat related work activities are conducted.
2. Employees experiencing signs and symptoms of a heat-related illness are to cease work and report their condition to their supervisor. Employees showing signs or demonstrating symptoms of heat-related illness are to be relieved from duty and provided means to reduce body temperature. Employees experiencing sunburn, heat rash or heat cramps will be monitored to determine whether medical attention is necessary. Emergency Medical Services will be called (911) when employees experience signs or symptoms of heat exhaustion or heat stroke.

Note: In remote areas specific procedures might be required to move or transport employees to a place where they can be reached by emergency services.

Heat-Related Illness First Aid and Emergency Response Procedures		
Heat-Related Illness	Signs and Symptoms	First Aid and Emergency Response Procedures
Sunburn	<ul style="list-style-type: none"> • Red, hot skin • Possibly blisters 	<ul style="list-style-type: none"> • Move to shade, loosen clothes • Apply cool compress or water to burn • Get medical evaluation if severe
Heat Rash	<ul style="list-style-type: none"> • Red, itchy skin • Bumpy skin • Skin infection 	<ul style="list-style-type: none"> • Apply cool water or compress to rash • Keep affected area dry
Heat Cramps	<ul style="list-style-type: none"> • Muscle cramps or spasms • Grasping the affected area • Abnormal body posture 	<ul style="list-style-type: none"> • Drink water to hydrate body • Rest in a cool, shaded area • Massage affected muscles • Get medical attention if cramps persist

Heat-Related Illness First Aid and Emergency Response Procedures		
Heat-Related Illness	Signs and Symptoms	First Aid and Emergency Response Procedures
Heat Exhaustion	<ul style="list-style-type: none"> • High pulse rate • Extreme sweating • Pale face • Insecure gait • Headache • Clammy and moist skin • Weakness • Fatigue • Dizziness 	<ul style="list-style-type: none"> • CALL 911 • Provide EMS with directions to worksite • Move to shade and loosen clothing • Start rapid cooling with fan, water mister or ice packs • Lay flat and elevate feet • Drink small amounts of water to hydrate and cool body
Heat Stroke	<ul style="list-style-type: none"> • Any of the above, but more severe • Hot, dry skin (25-50% of cases) • Altered mental status with confusion and agitation • Can progress to loss of consciousness and seizures 	<ul style="list-style-type: none"> • CALL 911 • Provide EMS with directions to worksite • Immediately remove from work area • Start rapid cooling with fan, water mister or ice packs • Lay flat and elevate feet • If conscious give sips of water • Monitor airway and breathing, administer CPR if needed

CHAPTER 16 SAFETY INSPECTIONS

A. REFERENCES:

1. [SPPM 2.78 Safety Precautions for Office Workers](#)
2. [SSPM 2.50 Self Inspection](#)
3. [Guidelines for Work Area Standards of Appearance](#)
4. [EH&S Building Safety Inspection Checklist](#)
5. [WAC 296-155-020 Housekeeping](#)
6. [Workplace Hazard Assessment Certification Form](#)

B. APPENDICES:

- a. Appendix A – EH&S Building Safety Inspection Checklist

C. SCOPE:

Workplace safety self-inspections are important to identify and control workplace hazards and to ensure compliance with University policies and regulatory requirements. University policy regarding the performance of safety self-inspections are provided in Safety Policy and Procedures Manual [SSPM 2.50](#).

D. REQUIREMENTS:

Unit managers must ensure building safety inspections are performed annually, at a minimum. However, high-hazard areas (e.g. chemical storage sites) should be inspected more frequently or when new construction, renovation, or significant process changes occur. The following are EH&S' safety and housekeeping inspection schedules:

1. Office areas are inspected annually;
2. Chemical storage areas are inspected bi-annually, dangerous waste storage areas are inspected weekly, per RCRA requirements.

Unit managers must ensure safety inspections are documented and documentation is available for review by department personnel. Records shall be maintained per EH&S policies.

E. BUILDING INSPECTION PROCEDURES:

Building safety inspections are intended to evaluate potential workplace safety and health hazards referencing the policy requirements outlined in the university safety policy and procedures manual (SPPM).

1. Inspections of work areas must be completed by a different unit (e.g. Environmental Services inspects the Occupational Health and Safety work areas).
2. The inspection must be conducted by the safety committee member or appointee for each unit. It is recommended the Director or unit manager periodically attend the inspection.
3. The inspection must be documented using the EH&S Building Safety Inspection Checklist (Appendix A) and submitted to all unit managers.
4. The unit managers shall review and acknowledge the information submitted on the *Building Safety Inspection Checklist*. Any deficiencies must be communicated to the responsible supervisor(s) and affected employees. Unit managers must work with supervisors and employees to fix deficiencies and recommended corrective actions.
5. Supervisors are required to take immediate remedial action to correct any safety deficiencies found during the inspection as identified on the report.
6. The EH&S Director is responsible to arrange funding of feasible corrective actions that may require modifications to facilities, new furniture or equipment.
7. The EH&S Safety Committee must review the *Building Safety Inspection Checklist* at the first meeting following the completion of the inspections. All deficiencies shall be reviewed by the Safety Committee to ensure corrective action has been satisfactorily completed or if further recommendations or follow-up is necessary.

EH&S is committed to identifying and promptly controlling hazardous conditions and practices that are likely to result in injury or occupational illness to employees or occupants. All employees must cooperate with the inspection process and recommended corrective actions.

- F. GENERAL WORKPLACE HAZARD ASSESSMENT:** Supervisors are required to develop and maintain a standard workplace hazard assessment certification form (see Chapter 24, PPE) for routine tasks performed by their employees. Supervisors must review the form for additional hazards, as needed, to support the work performed by their employees.

Employees observing a potential safety and health concern are to contact their supervisor. The supervisor should take immediate action to correct the concern. Building maintenance issues should be reported to the Operations unit and Facilities Operations at 335-9000.

Appendix A – Building Safety Inspection Checklist

See: https://old-www.wsu.edu/manuals_forms/PDF/SPPM/2-50-3-12.pdf

or <https://policies.wsu.edu/prf/1-00-contents/1-20-sppm-forms-index/#>

CHAPTER 17 LABORATORY SAFETY

A. References

- a. [EH&S Laboratory Safety](#)
- b. [EH&S Laboratory Signage Program](#)
- c. [EH&S Laboratory Safety Manual](#)
- d. [EH&S Chemical Safety](#)
- e. [WAC 296-828 Hazardous Chemicals in Laboratories](#)
- f. [WAC 296-901 Hazard Communication](#)

B. Scope

Environmental Health and Safety (EH&S) personnel enter WSU laboratories to perform laboratory surveys, inspections and provide other services such as safety consultations, training and various exposure and air monitoring services. Personnel shall adhere to the requirements of this chapter, the rules, policies and procedures referenced above, and make every effort to minimize exposure to chemicals and other potential health and safety hazards in the laboratory facilities. This chapter includes subsections that reference the following:

- ☛ Responsibilities
- ☛ Entering Laboratories and Shops
- ☛ Laboratory Signage
- ☛ Operating Procedures for Performing Laboratory Inspections and Other Services in Laboratories and Shops
- ☛ Employee Information and Training

C. Responsibilities

Executive Director

The department chair or director:

- Is responsible for ensuring this policy is implemented.
- Is responsible for the safety of all employees, students, and visitors in his or her areas of control.
- Reviews the control methods used by supervisors.
- Ensures the department maintains a file of required authorizations to use restricted or regulated hazardous chemicals.
- Reviews all Incident Reports.
- Ensures that appropriate corrections are made.

Supervisors

Supervisors:

- Prepare and implement procedures for personnel entering research, clinical under his or her direction.
- Train employees in laboratory safety procedures.
- Correct improper work practices.
- Develop a positive attitude among employees toward accident prevention.
- Review and evaluate the effectiveness of laboratory safety procedures at least annually, and updates as necessary.
- Consults the EH&S Lab Safety Officer with questions, as needed, to ensure correct and adequate development of laboratory safety policies and procedures.
- Reports and investigates all accidental injuries and work-related illnesses within 24 hours using the Incident Report (see [2.24](#)). Completes Supervisor's Accident Investigation Reports, if applicable. See [2.26](#).
- Initiates corrective action to ensure safety for employees.

Employee

The employee:

- Knows and adheres to safety guidelines and policies required for the task assigned.
- Reports unsafe conditions to the principal investigator, faculty member, and immediate supervisor.
- Reports accidents, injuries, and occupational illnesses to immediate supervisor for evaluation and possible investigation.
- Utilizes fume hoods, laboratory safety devices, and personal protective equipment properly as trained. See also [3.10](#).

EH&S Laboratory Safety Officer

The laboratory safety officer:

- Promotes laboratory health and safety programs.
- Assists supervisors with implementing laboratory safety policies and procedures.
- Records, evaluates, and reports laboratory accidents and laboratory incidents.
- Develops and maintains training resources and provides laboratory safety training.

D. Entering Laboratories and Shops

EH&S personnel can potentially be exposed to hazards when entering research laboratories and shops. Employees must review laboratory signage posted at laboratory entrances (See Section E) for hazard information and the personal protective equipment (PPE) required to enter the laboratory. At a minimum, EH&S personnel shall wear a

laboratory coat or other nonflammable clothing including long pants, closed toed shoes and eye protection into laboratories and have nitrile gloves available. EH&S employees are encouraged to engage laboratory personnel as necessary to obtain additional hazard information.

EH&S personnel working in laboratories and shops shall limit contact with laboratory materials when possible. It may be necessary to manipulate some laboratory equipment or materials such as activating an eyewash or moving chemical containers to view other containers to support the survey or consultation. Placing survey materials e.g. notepads, clipboards on laboratory surfaces may chemically or otherwise contaminate those items and should be avoided. See Section E for more information.

E. Laboratory Signage

Laboratory signage identifies laboratory hazards, PPE requirements and emergency contact information. PIs or their designee update the laboratory signage annually or when hazards change at <http://ehs.wsu.edu/labsafety/LabSignageProgram.html>.

The laboratory signage program is intended to:

- a. Protect human health and safety;
- b. Protect research;
- c. Identify the PPE and/or other controls necessary to enter the laboratory; and
- d. Provide a flexible program that communicates the necessary information for diverse laboratory use that can be updated as hazards change.

Refer to Chapter 14, Hazard Communication for more information.

F. Operating Procedures for Performing Laboratory Inspections and Other Services in Laboratories and Shops

EH&S personnel enter WSU laboratories where chemicals, radioactive materials, biohazard materials and lasers are used for education and research. EH&S personnel shall be cognizant of laboratory hazards when entering laboratories to perform work. The following information focuses on correct procedures for working safely in laboratories.

- a. **Chemicals:** Laboratory chemicals shall be labeled per [WAC 296-901](#) Hazard Communication. EH&S personnel entering laboratories must understand label elements including pictograms and hazard statements, and the hazards they represent. EH&S employees shall consult SDS or contact their supervisor whenever additional information is necessary.

Employees should never eat or drink in a laboratory with chemicals. They should always wear gloves when touching any chemical containers or

storage areas to avoid potential injury from chemical residue that may be present. If the chemical container appears unsafe to touch (for example peroxides are observed), the container should be left alone, laboratory personnel should be informed not to touch it, and EH&S Environmental Services should be informed immediately.

EH&S personnel entering laboratories shall have a fundamental understanding of chemical hazards including flammability, corrosivity, reactivity and toxicity, and physical hazards such as extreme temperatures and pressures. The minimum PPE identified on laboratory signage shall be worn when entering the laboratory. However, upon entering the following are encountered, leave and contact the Occupational Health and Safety or Environmental Services Program Supervisor or Laboratory Safety Officer for additional instruction:

- Bulging chemical containers or containers (not actively heated) that are warm/hot to touch;
- Old isopropyl ether containers or isopropyl ether containers where crystals are observed or peroxide forming chemicals under distillation where crystals have formed e.g. vinyl ether, tetrahydrofuran
- Concerning odors;
- Irritation to eyes, skin or mucous membranes;
- Leaking gas cylinders or gas delivery systems;
- Fuming or runaway chemical reactions;
- Malfunctioning equipment e.g. electric arcing, unbalanced centrifuge, leaking glovebox;
- Poor housekeeping where chemical carcinogens are in use; or,
- Other concerning conditions or activities.

See also this APP's Hazard Communication, Spill Response, and Waste Collection chapters.

- b. **Radioactive Materials:** Radioactive materials used in laboratories will be clearly marked with the radiation symbol. EH&S personnel should not handle chemicals or other materials marked with this symbol unless trained and instructed to do so by their supervisor. Never eat, drink, or chew gum in laboratories using radioactive materials. If you observe what you think may be improperly managed radioactive materials contact the Radiation Safety Office.
- c. **Biohazard Materials:** Biohazard materials include organisms that could be harmful to your health. Any biohazard material should be clearly marked with the biohazard symbol. Unless specifically directed by their supervisor, EH&S personnel should not handle laboratory materials identified as biohazards. Never eat or drink in a laboratory using biohazardous materials. Do not attempt to enter a Biological Safety Level 3 (BSL-3) laboratory without a

departmental escort. BSL-3 laboratories have unique entry protocols. If you observe what you think may be improperly managed biohazardous materials, contact the Biosafety Office.

- d. **Vivaria:** Vivaria keep and/or raise research animals and often require specialized entry and/or quarantine protocols such as stepping on mats to sterilize your shoes. In some cases you may not enter a vivarium if you have been to another building's vivarium that same day. Contact vivarium personnel (such as the vivarium manager) before entering.
- e. **Laser Laboratories:** WSU policy requires laboratories using lasers to be clearly marked both on the laboratory signage (see Section E) and other required signage indicating a laser may be in use, the laser's power and whether it is currently operating. Lasers can cause serious eye or skin damage. Specialized protective eyewear is required to enter a laboratory with an active Class 3B or 4 laser. Access to laboratories with active Class 3B and 4 lasers *should* be restricted by laboratory personnel. EH&S personnel may not enter a laboratory where a class 3 or greater unshielded laser is in use without an escort or confirmation from laboratory personnel the laser is not activated.
- f. **Sharps:** WSU policy requires laboratory users to dispose sharps (syringes, cannulas, razor blades, etc.) in approved puncture resistant containers and not overfill sharps containers. EH&S personnel may encounter containers that are overfilled, or sharps managed inappropriately, do not handle sharps without tools and/or cut/puncture resistant PPE.
- g. **Glass:** WSU policy requires laboratory users to place glass waste in designated containers apart from regular trash. These containers must be puncture resistant (cardboard or plastic), lined, and clearly marked. EH&S personnel may encounter containers that are overfilled or damaged. Sharp and/or broken glass items may be found outside glass waste containers. EH&S personnel shall not handle broken glass without tools and/or cut/puncture resistant PPE.
- h. **Mechanical Hazards:** Please reference this APP's PPE, Machine and Tool Safety and Lock-Out Tag-Out chapters.

G. Employee Information and Training

Employees expected to enter laboratories will receive training on general laboratory safety principles and practices upon initial employment. Training will include Hazardous Chemicals in Laboratories [WAC 296-828](#) and Hazard Communication [WAC 296-901](#). Training will be provided by the Laboratory Safety Program Manager or another person knowledgeable and competent in the topic (supervisor is responsible for determining the

competent person for providing this training in their unit). Employee training is to be documented by recording the employee names, the date and content of the training.

Refer to Chapter 29, Training for more information.

CHAPTER 18 LADDER SAFETY

A. REFERENCES

- a. [SPPM: S3.34, Elevated Work Safety](#)
- b. [WAC: Chapter 296-876, Ladders-Portable and Fixed](#)

B. SCOPE

This chapter covers the safety of EH&S employees when using ladders. The requirements are governed by [Washington Administrative Code 296-876](#), Portable and Fixed Ladders and [WSU Safety Policy and Procedure Manual \(SPPM\) Chapter S3.34](#), Elevated Work Safety.

C. APPENDICES

- a. Appendix A - Ladder Inspection Checklist
- a. Appendix B - Guidelines For Ladder Use

D. RESPONSIBILITIES

Supervisors

- Ensure all employees that use ladders receive ladder safety training before performing work.
- Enforce correct ladder.
- Provide the correct ladder types for the intended application(s).
- Ensure ladders are inspected when first placed into service, prior to every use, and immediately after potential damage from impact e.g. tip over, excessive heat or corrosive chemicals.
- Ensure ladders with defects are taken out of service immediately, affixed with an out-of-service or do-not-use sign and disposed as soon as possible.

Employees

- Participate in training when required.
- Select the appropriate portable ladder for the work activity.
- Maintain ladders in good, usable condition.
- Inspect ladders before each use by using the inspection checklist (Appendix A).
- Do not use defective ladders, take the ladder out of service immediately, and report the observed defects to their supervisor.

E. TRAINING

Training is provided to employees by the EH&S Occupational Health and Safety (OHS) unit. Re-training is required when an employee exhibits inadequate knowledge, skill or understanding or non-conforming use of ladders.

Training will require participants to demonstrate an understanding of WAC 296-876 and a proficiency using ladders. Training information will include:

- The proper selection, use, placement and care in handling and transporting ladders.
- The maximum intended load capacities of ladders that are used.
- How and when to inspect ladders.

Appendix A

Ladder Inspection Checklist

Provided by Werner Co.



Stepladder

Size _____ ft.

 Fiberglass
 Aluminum
 Wood


Circle Areas of Damage

Steps: Loose, Cracked, Bent or Missing

Rails: Cracked, Bent, Split or Frayed
Rail Shields

Labels: Missing or Not Readable

Pail Shelf: Loose, Bent, Missing or Broken

Top: Cracked, Loose or Missing

Spreader: Loose, Bent or Broken

General: Rust, Corrosion or Loose

Other: Bracing, Shoes, Rivets

Yes No

<input type="checkbox"/>	<input type="checkbox"/>

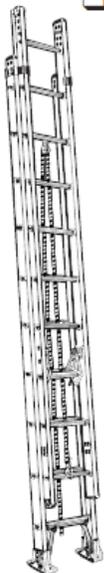
Actions:

- Ladder tagged as damaged & removed from use
- Ladder is in good condition



Extension Ladder

Size _____ ft.

 Fiberglass
 Aluminum


Circle Areas of Damage

Rungs: Loose, Cracked, Bent or Missing

Rails: Cracked, Bent, Split or Frayed

Labels: Missing or Not Readable

Rung Locks: Loose, Bent, Missing or Broken

Hardware: Missing, Loose or Broken

Shoes: Worn, Broken or Missing

Rope/Pulley: Loose, Bent or Broken

Other: Bracing Rivets

General: Rust, Corrosion or Loose

Yes No

<input type="checkbox"/>	<input type="checkbox"/>

Actions:

- Ladder tagged as damaged & removed from use
- Ladder is in good condition

Appendix B – Guidelines for Ladder Use

General

- Ensure ladders are set-up and secured to prevent accidental displacement or use barricades when in a location where they could be displaced by workplace activities or traffic. Place the ladder with a secure footing on a firm, level support surface. Do not place on snow, ice or other slippery surface unless it is secured or equipped with slip-resistant feet applicable to the support conditions.
- Ensure correct types of ladders are used so the maximum intended load (MIL), (MIL = the weight of the employee + tools) does not exceed manufacturer's rated ladder capacity (see MIL ratings below).
- Ensure ladders are not moved, shifted, or adjusted while occupied by personnel.
- Do not place ladders on boxes, barrels or other unstable bases.
- Metal ladders shall not be used in the vicinity of energized electrical equipment or lines.
- Wood ladders shall not be painted with opaque paint, except for numbering purposes.
- Ladders transported on motor vehicles shall be properly supported and secured to the vehicle at all times to prevent damage.
- Do not use ladders for skids, braces, workbenches, or for any purpose other than climbing.
- When you are ascending or descending a ladder, do not carry objects that will prevent grasping the ladder with both hands.
- Always face the ladder when ascending and descending.
- Only one person is allowed on a ladder at a time.
- Do not jump from a ladder when descending.
- Ladder components must be free of grease and/or oil.
- Do not store portable ladders near sources of heat, moisture, or chemicals.
- Store portable ladders in a position to maintain straightness and to avoid impact damage.

Ladder Types

Duty Rating	Ladder Type	Use	MIL Pounds
Extra Heavy Duty	IA	Industry, utilities, contractors	300
Heavy Duty	I	Industry, utilities, contractors	250
Medium Duty	II	Painters, offices, light maintenance, storage warehouse	225
Light Duty	III	General household type use	200

Portable Step Ladders

- Do not place tools or materials on the steps or top cap of a stepladder.
- Do not use the top cap or top step of a stepladder as a step or stand.
- The top step can be used if it is 18" or more below the top cap.
- Always level all four feet and lock spreaders in place.
- Do not use a stepladder as a straight ladder or in a partially open position.
- Do not use or climb on the rear braces or shelf unless they are specifically designed for that purpose.

Portable Straight type or Extension Ladders

- Straight or extension ladders must extend at least three (3) feet beyond the supporting object when used to access an elevated work area.
- After raising the extension portion of a two or more stage ladder to the desired height, check to ensure that the safety dogs or latches are engaged.
- Set and use at a pitch so that the horizontal distance from the top support to the foot of the ladder is about one-quarter of the working length of the ladder.
- Place ladders so that side rails are equally supported by the top support, unless the ladder is equipped with a single support attachment.
- Make sure the top support of the ladder is reasonably rigid and able to support the load.
- All ladders must be equipped with safety (non-skid) feet.
- All extension or straight ladders must be secured or tied off at the top when work is to be performed on the ladder.
- Always use a full body harness with a lanyard that is secured to an anchor point rated for fall arrest and secure the ladder secured at the top and base when work requires the use of both hands and is more than 25 feet above the ground or floor.
- Work shall not be performed from a ladder more than 25 feet above the ground or floor if the work requires wearing eye protection or a respirator.
- Do not tie or fasten ladder sections together to make a longer ladder unless the manufacturer endorses this use and all manufacturer required fittings/attachments are available.
- Ensure each section of a multi-section ladder, when fully extended and locked in position to be used, overlaps the adjacent section as indicated in Table 2, Minimum Required Overlap for Extension Ladders.

Minimum Required Overlap for Extension Ladders

If the ladder size (feet) is	Minimum required overlap for a two-section ladder is (feet)
Up to and including 36	□ 3
Over 36 and up to and including 48	□ 4
Over 48 and up to and including 60	□ 5

CHAPTER 19 LEAD SAFETY

A. REFERENCES:

- [SPPM 5.25 Lead Safety](#)
- [WAC Chapter 296-155-176](#) – Lead in Construction
- [WAC 296-62-07521](#) – Lead in General Industry

B. APPENDICES

- a. WSU Lead Management Plan
- b. Good Faith Survey Hazard Assessment

C. SCOPE:

This chapter establishes requirements for EH&S employees that may contact or disturb lead-containing materials. The WSU Lead Management Plan (Appendix A) is the primary policy document for lead-related activities at WSU promoting safety and delineating regulatory requirements.

D. DEFINITIONS:

Competent Person: An employee capable of identifying existing and predictable lead hazards in the environment or working conditions and has authorization to take prompt corrective measures to eliminate them (WAC 296-155-17605 (2)).

Lead Program Manager: An employee assigned by the EH&S department to act as the primary lead resource and Competent Person for EH&S employees. Duties include the maintaining the WSU Lead Management Program, retaining lead and XRF training records and performing “custodial authorized user” duties for the X-ray fluorescence (XRF) device.

Lead-containing Material: any material containing detectable quantities of lead.

Lead-related Work: Work involving “trigger tasks” as defined below.

Regulated Area: An area established by the employer demarcating areas where lead work is conducted and within which airborne concentrations of lead exceed or can reasonably be expected to exceed the permissible exposure limit (PEL).

Trigger Task: Tasks that involve the potential disturbance of lead-containing materials as outlined in WAC 296-155-17609. The following are considered trigger tasks:

1. Demolition of structures or materials that may contain lead coatings
2. Scraping/sanding of painted surfaces
3. Heat gun application to painted surfaces
4. Cleaning surfaces with power tools

5. Spray painting
6. Sweeping/shoveling lead containing materials
7. Rivet busting
8. Abrasive blasting of components with lead coatings
9. Welding on painted or lead-containing surfaces
10. Cutting painted or lead-containing surfaces
11. Torch burning of paints or coatings

E. RESPONSIBILITIES

Lead Program Manager

- a) Provides lead awareness training
- b) Serves as department consultant for lead issues
- c) Assists with the collection of air and bulk samples used to evaluate worker exposures and waste designation
- d) Maintains lead sampling and worker exposure monitoring records
- e) Provides quality control/quality assurance oversight on lead-related projects
- f) Recommends appropriate engineering controls, work practices and personal protective equipment
- g) Periodically reviews and updates the Lead Management Plan

Supervisors

- a) Ensure employees adhere to this chapter's requirements and the Lead Management Plan
- b) Request the Lead Program Manager or designee perform sampling/analysis of suspect lead containing materials
- c) Ensure lead-related work is performed under a lead work plan
- d) Designate Competent Persons to oversee lead-related work
- e) Ensure that potentially exposed employees receive annual awareness training and medical surveillance (if applicable)
- f) Distribute exposure monitoring data to all affected employees

Employees

- a) Adhere to this chapter's requirements and the Lead Management Plan
- b) Identify suspect lead containing materials to their Supervisor and/or Lead Program Manager
- c) Perform lead-related per the lead work plan
- d) Adhere to Lead Competent Person's instruction
- e) Attend annual awareness training and submit to medical surveillance (if applicable)

F. TRAINING:

General Training - All employees who contact or disturb lead-containing materials or enter a lead regulated area must attend lead-awareness training. The Lead Program Manager, or other qualified OHS Industrial Hygienist within the department will provide lead-awareness training per WAC 296-155-17625. Supervisors are responsible for instructing workers prior to assignment of job tasks in which lead exposure may occur. Re-training will be required when:

- There have been changes in the workplace, such as new processes and equipment, which render previous training obsolete;
- Changes in the types of machines or equipment that render the previous training obsolete;
- And/or when an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the equipment.

XRF Lead Analyzer - Custodial Authorized User

The Lead Program Manager must complete custodial authorized user training administered by the WSU Radiation Safety Office (RSO) to oversee XRF use and training for the EH&S department and others that use the device. A current "Authorized User" cover sheet must be displayed at the XRF unit storage location.

General XRF Training – All employees assigned to use the XRF device are required to complete radiation awareness training, as directed by the WSU Radiation Safety Office (RSO). This training requirement is satisfied by completing module 12 on-line at <http://www.rso.wsu.edu/training/training.html> . In addition, the XRF Custodial Authorized User will provide function specific training. Upon completion of training, all employees must sign the "User Acknowledgement" form found in the Lead Management Plan prior to use.

G. GENERAL REQUIREMENTS:

- Refer to the WSU Lead Management Plan (Appendix A) for specific WSU policy and procedures regarding lead management and safety.
- The EH&S Lead Program Manager will fulfill Competent Person duties for EH&S personnel and WSU employees throughout campus from emergencies that may have disturbed lead. This person is also responsible for the WSU Lead Management Plan and acts the primary resource for EH&S employees regarding lead safety.
- All employees must comply with safety and health rules and practices on contractor controlled job sites. This may include wearing site specific PPE, safety clothing and observing access limitations. Supervisors are responsible for reviewing these requirements and ensuring employees' compliance in order to perform the work safely.
- All employees that enter a lead regulated area must wear the appropriate respiratory protection assigned by a Competent Person. A Competent Person may be the Lead Program Manager or qualified person designated as such by a contractor that is approved by the Lead Program Manager or industrial hygienist in the Occupational Health and Safety (OHS) group.

H. TASK SPECIFIC REQUIREMENTS:

Lead Surveys: All employees that perform lead surveys or inspections must have completed lead awareness training and XRF training. Additional hazards may be present in the work area that must be addressed before conducting the survey. Such hazards include, but are not limited to hazardous energy (e.g. electricity, radio frequency, mechanical energy) noise, elevated work, penetration (sharp objects), and compression (pinch points). Employees must conduct a hazard assessment prior to each survey. A hazard assessment template intended to support asbestos Good Faith Surveys and lead paint evaluations is included in Appendix B. Supervisors must review hazard assessments, ensure proper PPE is used and required training is completed and documented before the task commences.

3rd Party Lead-related Work Oversight: Oversight of all in-house or outside contractor lead-related work must be conducted by an employee with lead awareness training. Since hazards may vary greatly at different job sites, employees must conduct a hazard assessment for each oversight location. Supervisors must review hazard assessments and ensure proper PPE is used and required training is completed and documented before the task commences.

Construction, Demolition, Repair, Remodeling, Maintenance or Renovation

Activities: All employees involved in the above activities, including project managers, supervisors, leads and workers are responsible for their roles and responsibilities outlined in the attached Lead Management Plan.

LEAD MANAGEMENT PLAN

Updated June 26, 2015

WASHINGTON STATE UNIVERSITY

ENVIRONMENTAL HEALTH, SAFETY AND RISK MANAGEMENT

1.0 Purpose

The purpose of this Washington State University (WSU) Lead Management Plan is to protect employees, students, campus visitors and children from the toxic effects of lead and comply with applicable state and federal regulations. This plan outlines methods to:

- Identify lead containing materials that might be disturbed during construction/renovation or demolition activities,
- Assess the hazard from potential lead disturbance,
- Control lead exposure hazards to WSU employees, students and campus visitors
- Address lead hazards and lead disturbances associated with WSU child-occupied and target housing located on campus.

2.0 Applicable Regulations

WAC 296-155-176 – *Lead in Construction*

WAC 296-62-07521 – *Lead in General Industry*

WAC 365-230 – *Lead-Based Paint Activities*

WAC 173-303 – *Dangerous Waste Regulations*

40 CFR Part 745 – *EPA Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities (TSCA Title IV)*

40 CFR Part 260 to 273 – *EPA Resource Conservation Recovery Act*

24 CFR Part 35 – *HUD Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Property and Housing Receiving Federal Assistance*

3.0 Introduction

3.1 Health Hazards of Lead Exposure

Lead enters the body either by ingestion or inhaling lead dust or fume. Lead has no function in human biological processes and interferes with blood formation, reproduction, nerve, muscle function and urinary tract function. When absorbed in high doses, lead can be toxic.

3.2 Lead-Containing Materials

Any material that potentially contains lead must be sampled or assumed to contain lead before it is disturbed.

The following materials potentially contain lead:

1. Paint
2. Lead acid batteries
3. Lead pipes
4. Electrical cable covering
5. Brick mortar
6. Pottery glazes

7. Stained glass windows
8. Terne metal (lead 80% / 20 % tin coated – usually old roofing)
9. Lead solder
10. Lead shielding for x-rays and radioactive materials
11. Historic pesticides and the ground upon which they were applied

4.0 Definitions

Abatement – Any measure or set of measures designed to permanently eliminate lead-based paint hazards including, but not limited to:

- a. The removal of paint and dust, the permanent enclosure or the encapsulation of lead-based paint with an EPA-approved encapsulate, the replacement of painted surfaces or fixtures, or the removal or covering of soil, when lead-based paint hazards are present in such paint, dust or soil and
- b. All preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measure (WAC 365-230-020 (1))

Action Level (AL) – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air (WAC 296-155-17605 (1))

Child-Occupied Facility – A building (or portion thereof) constructed before 1978 that is visited regularly by a child who is 6 years of age or less, on at least 2 different days within a given week, if each day's visit is at least 3 hours and the combined weekly visit is at least 6 hours in length, and the combined annual visits are at least 60 hours in length. Child occupied facilities include, but is not limited to a day-care center, a preschool, and a kindergarten classroom (WAC 365-230-020 (11)).

Competent Person – An employee capable of identifying existing and predictable lead hazards in the environment or working conditions and has authorization to take prompt corrective measures to eliminate them (WAC 296-155-17605 (2)).

HUD Guidelines – U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition).

Lead-Based Paint – A paint or surface coating that contain lead equal or in excess of 1.0 milligrams per square centimeter (mg/cm^2), 0.5% by weight, or 5,000 micrograms ($\mu\text{g}/\text{g}$) per gram (WAC 365-230-020 (49)).

Permissible Exposure Limit (PEL) – The employer shall assure that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$) averaged over an 8-hour period (WAC 296-155-17607(1)).

Target Housing – Any housing constructed before 1978, except any of the following:

- a. Housing for the elderly or persons with disabilities, unless any 1 or more children age 6 years or less resides or is expected to reside in that housing.
- b. A zero bedroom dwelling (i.e. dorm, studio apartment)
- c. An unoccupied dwelling unit pending demolition (WAC 365-230-020 (78)).

5.0 Roles and Responsibilities

Environmental Health and Safety

- h) Will provide and assist WSU departments with lead awareness training
- i) Serve as department consultant for lead issues
- j) Serve as department liaison to DOSH/Washington Labor and Industries
- k) Assist departments with the collection of air and bulk samples used to evaluate worker exposures and waste designation
- l) Collection and maintenance of lead sampling and worker exposure monitoring records
- m) Provide quality control/quality assurance on lead-related projects
- n) Recommend appropriate engineering controls, work practices and personal protective equipment
- o) Periodically review and update this Lead Management Plan

Facilities Services

- a) Supervisors and employees ensure this Lead Management Plan is followed
- b) Supervisors or shop leads designate Competent Persons to oversee work that may impact lead containing materials
- c) Estimators or shop Supervisors must determine lead content of suspect lead-containing materials for shops projects by using XRF or bulk sampling analysis and transmit results to EH&S for each project
- d) Project Managers of public works projects must ensure a lead survey is completed and given to the contractor prior to bid. Contractors are then responsible for evaluating and controlling lead exposure as applicable for their personnel and their subcontractor's personnel. Contractors may be required to submit a lead work plan should there be a risk of lead exposure to WSU employees, students, campus visitors or children in the project vicinity.
- e) Supervisors and employees ensure that potentially exposed workers receive annual awareness training and medical surveillance (if applicable).
- f) Supervisors distribute exposure monitoring data to all affected employees
- g) Supervisors notify EH&S of lead-related work by submitting Lead Work Plans

Housing and Dining Maintenance Services (HDMS)

- g) Supervisors and employees ensure this Lead Management Plan is followed
- h) Maintenance leads designate Competent Persons to oversee lead-related work
- i) Supervisors identify projects that disturb lead-based paint in WSU student apartments which may be regulated by the Renovation Repair and Painting (RRP) rule (see Section 7.0)
- j) Supervisors request EH&S to perform sampling/analysis of suspect lead containing materials
- k) Supervisors and employees ensure that potentially exposed workers receive annual awareness training and medical surveillance (if applicable)
- l) Supervisors distribute exposure monitoring data to all affected employees

- m) Supervisors notify EH&S of lead-related work and submit an applicable Lead Work Plan

6.0 Lead in Construction

The following addresses in-house construction activities performed on WSU properties. Painting activities, unless part of a routine scheduled maintenance plan, are considered construction activities in this section. Additional requirements applying to child-occupied facilities and target housing are addressed separately in Section 7.0.

6.1 Trigger Tasks

Trigger tasks involve the potential disturbance of lead-containing materials. Performing these tasks “triggers” the employee protection requirements in WAC 296-155-17609. If the project includes any of the trigger tasks listed below, this Lead Management Plan must be followed and/or addressed.

1. Demolition of structures or materials that may contain lead coatings
2. Scraping/sanding of painted surfaces
3. Heat gun application to painted surfaces
4. Cleaning surfaces with power tools
5. Spray painting
6. Sweeping/shoveling lead containing materials
7. Rivet busting
8. Abrasive blasting of components with lead coatings
9. Welding on painted or lead-containing surfaces
10. Cutting painted or lead-containing surfaces
11. Torch burning of paints or coatings

6.2 Awareness Training

All workers that perform the trigger tasks on lead-containing materials must attend annual lead awareness training. Supervisors provide EH&S a list of employees that require training. EH&S provides the training per WAC 296-155-17625.

6.3 Lead Identification

If trigger tasks will be conducted on any materials that may contain lead, the material(s) need to be sampled before the start of the project. For Facilities Services shops projects, the job estimator or shop supervisor is responsible for sampling suspect materials prior to disturbance. Maintenance leads are responsible for sampling suspect materials on HDMS projects. EH&S offers training for any individual to use the x-ray fluorescence (XRF) tool to determine lead content of suspect coatings. EH&S will also perform the sampling if requested in writing. EH&S charges may apply. Sample results must be recorded in the project file and transmitted to the Lead Program Manager via electronic mail to Matt McKibbin – mrmckibbin@wsu.edu.

6.4 Written Lead Work Plan

Facilities Services job estimators or shop supervisors and HDMS maintenance leads must complete a Lead Work Plan (Attachment A) prior to any project that involves trigger tasks with a lead-containing material. A copy of the plan must be sent to the EH&S Lead Program Manager

and kept in the project files. EH&S will review the plan for appropriate engineering controls, work practices, personal protective equipment and air sampling strategies and make recommendations. If a negative exposure assessment (NEA) has been documented and approved by EH&S for the operation within the past 12 months (see Section 6.5.2), a Lead Work Plan may be omitted. Use of an NEA must be documented by the employees' department in the project files.

6.5 Air Monitoring

Personal breathing-zone air monitoring shall be conducted to determine occupational exposures to lead while performing trigger tasks. Employees who perform worker exposure monitoring must be proficient in the use of air monitoring equipment, sampling media, and procedures associated with NIOSH Method 7082 (Attachment D). E&HS will assist supervisors and employees with exposure air monitoring if requested in writing. Charges to the project may apply. The supervisor is responsible for distributing the sampling results to all affected employees.

6.5.1 Initial Exposure Assessments

In the absence of similar air monitoring data within the past 12 months for a specific trigger task operation, an initial exposure assessment must be completed for the project. An exposure above the permissible exposure limit (PEL) is assumed until the initial exposure assessment is completed. By rule, exposures and associated respiratory protection may be assumed based on the trigger task performed (see Attachment B). Additionally, advanced work practices outlined in Section 6.7 are required while performing the work. If air monitoring results indicate exposures above the PEL, advanced work practices and appropriate respiratory protection must continue.

For exposures above the action level of $30 \mu\text{g}/\text{m}^3$ and below the PEL of $50 \mu\text{g}/\text{m}^3$, minimum work practices outlined in Section 6.6 may be used. However, the Competent Person shall review the work practices with the workers performing the lead work and consult with EH&S on additional engineering controls and exposure monitoring to ensure that exposures remain below the PEL.

6.5.2 Negative Exposure Assessments (NEA)

When exposure assessments have determined exposures below the action level, or negative exposure, air sampling may be discontinued. However, in order to apply the current job to a previous NEA, it must be documented and approved by EH&S within the previous 12 months and the following practices must be similar:

- a) Current process
- b) Type of material, including % of lead content
- c) Control methods/engineering controls
- d) Work practices
- e) Environmental conditions (i.e. interior/exterior, air flow)

Whenever there has been a change noted in the practices above that may result in additional lead exposure, additional air monitoring and a new or modified Lead Work Plan is required for the project. All Lead Work Plans must be approved by EH&S prior to commencement of work.

6.6 *Minimum Work Practices*

Employees working with lead-containing materials must minimize dust generation and lead contamination. The following work practices must be used while performing work impacting lead containing materials. Additional requirements for work performed above the PEL or work without adequate air monitoring data is provided in Section 6.7.

Competent Person

- a) All lead-related work must be supervised by a Competent Person designated by the WSU department.
- b) This person must be capable of identifying existing and predictable lead hazards in the environment or working conditions and has authorization to take prompt corrective measures to eliminate them.

Limit Dust Generation

- a) Wet materials before and during disturbance
- b) Use HEPA vacuums or wet mop to clean up dust and debris as soon as practical.
- c) Do not perform dry sweeping, use compressed air, or use vacuums not equipped with HEPA filters

Hygiene

- a) Before breaks and at the end of the work day, wash hands and face.
- b) Do not eat, drink, smoke or apply cosmetics at the job site.

Limit Contamination

- a) Clean tools, equipment, etc. before taking them from the job site
- b) Do not wear contaminated clothing outside of the job site
- c) Wash or dispose of contaminated clothing prior to re-use

Protect Surfaces

- a) Use plastic drops underneath work areas to collect dust and debris.
- b) Use plastic over horizontal building surfaces and equipment to prevent contamination of nearby desks and equipment.

6.7 *Advanced Work Practices*

These advanced work practices must be used in addition to the minimum work practices for all work that disturbs lead containing materials and airborne concentrations of lead are either not known or determined to be above the PEL of 50 $\mu\text{g}/\text{m}^3$ of air.

6.7.1 *Personal Protective Equipment (PPE)*

A. Respiratory Protection

See Attachment B for respirator selection. Employees required to use respirators must be enrolled in the respiratory protection program which includes medical clearance for the use of negative pressure respirators, annual fit tests and training. Contact the EH&S Respiratory Protection Program administrator at 335-3041 for more information.

B. Protective Clothing and Equipment

Protective work clothing, gloves, hats, shoes and eye protection must be provided while performing lead-related work. Disposable Tyvek type protective coveralls are recommended. Washable protective clothing must be disposed of or stored in designated changing areas at the end of each shift and not taken off-site unless for the purpose of laundering. Laundering facilities must be informed the clothing is or may be lead contaminated and have appropriate facilities and programs in-place to manage lead contaminated clothing and waste water.

6.7.2 *Hygiene Facilities and Practices*

A. Clean Room

Clean change areas must be established outside the lead work area. These areas must be kept clean and provide a means of separating street-clothes from contaminated clothing and equipment to prevent cross-contamination.

B. Shower

A shower and soap shall be made available to employees to use at the end of each work shift. Showers are located at the McCluskey insulator shop. Showers located in academic buildings on campus may be used with the approval of EH&S and the competent person.

6.7.3 *Engineering Controls*

Engineering controls should be used as practical to reduce the amount of dust generated during work and minimize migration of dust outside the work area.

Methods available include:

1. Isolation of the work area with plastic barriers (i.e. doorways, HVAC intakes)
2. Power tool dust collection systems
3. HEPA equipped scrubbing machines with local exhaust

6.7.4 *Demarcation of Work Area*

Signs and/or warning tape shall be posted outside the lead work area. Signs should say:

Warning**Lead Work Area****Poison****No Smoking or Eating**

6.8 Lead Waste

Lead-containing construction waste may be regulated as a dangerous waste in the state of Washington. Below, EH&S has compiled a list of common waste streams associated with construction and maintenance projects and corresponding management instructions to comply with dangerous waste and environmental regulations. Contact EH&S if your waste cannot be categorized in the list below.

Metallic lead components (i.e. roof flashing, wall sheeting) – Recycle at surplus if not contaminated with asbestos, biological, radioactive or chemical hazards. Contact EH&S for instructions on handling and disposal of contaminated items.

Painted construction waste (i.e. gypsum, wood, plaster) – Mixed painted debris with lead-containing coatings of $<1.0 \text{ mg/cm}^2$ as analyzed by XRF or $<5,000$ parts per million by bulk sample analysis may be disposed as general construction waste. For waste with paint concentrations above these thresholds, additional analytical testing may be required. Contact EH&S Environmental Services for waste management instructions.

Contaminated soil – Projects which involve soil contaminated with lead-containing paint chips must be reviewed by EH&S. Additional analytical testing and soil removal may be required to comply with Washington dangerous waste and Model Toxic Control Act (MTCA) regulations.

Paint chips – Paint chips must be managed as dangerous waste. Contact EH&S Environmental Services for waste management instructions.

Dangerous waste generated by WSU must be disposed by EH&S through the state contract, unless otherwise directed by EH&S.

6.9 Quality Control/Quality Assurance (QA/QC) Program

At the discretion of the Lead Program Manager, EH&S will conduct periodic QA/QC of lead-related work performed on campus to ensure conformance with the Lead Management Plan. Activities may include additional air monitoring, visual inspections, review of work practices and paint sampling. All work performed above the Action Level must include an EH&S on-site review of work practices at the start of the project.

6.10 Medical Surveillance

All employees which may be exposed above the lead action level of $30 \mu\text{g/m}^3$ of air, including employees who perform trigger tasks with unknown exposures, must receive initial medical surveillance. Medical surveillance consists of biological monitoring at a minimum, which includes tests for blood lead and zinc protoporphyrin levels.

Employees with occupational lead exposures above the action level for 30 or more days per year and/or blood lead levels above 40 micrograms per deciliter ($\mu\text{g}/\text{dl}$) require additional biological monitoring and consultation with a physician as required by WAC 296-155-17621. Any employee with occupational exposures above the action level and blood lead level above 50 $\mu\text{g}/\text{dl}$ must be temporarily removed from work involving lead exposure. Departments with employees in these categories must consult with EH&S to comply with the additional regulatory requirements. The employees department must pay for all medical surveillance required by regulations.

Employees may opt out of medical surveillance by signing a declination document (Attachment A). Employees who choose to opt out must contact EH&S.

7.0 Child-Occupied Facilities and Target Housing

This section specifically addresses the federal and state regulations that pertain to lead-based paint in child-occupied facilities and target housing. For the purpose of these regulations, the definition of a child-occupied facility and target housing applies to the WSU student apartments operated by Housing and Dining Maintenance Services (HDMS) and the WSU Children's Center located on Olympia Avenue. All facilities affected by these regulations have been surveyed for the presence of lead-based paint and are available for review electronically by request to EH&S.

Laws and rules regarding lead-based paint in child-occupied facilities and target housing are broken down into two categories, 1) Lead Renovation, Repair, and Painting rules and 2) Lead Risk Assessment and Abatement rules.

7.1 Lead Renovation, Repair and Painting (RRP) Rule

Any project at WSU student apartments or the Children's Center which disturbs lead-based paint falls under the RRP rule. Projects which impact materials that do not meet the definition of lead-based paint must still be performed according to the minimum provisions of this document.

HDMS and the Children's Center must ensure the following requirements are met for any in-house construction, renovation, demolition or maintenance activities that impact lead-based paint:

1. **EH&S Notification** – EH&S must be notified of all projects which will disturb lead-based paint by submitting a Lead Work Plan to the Lead Program Manager.
2. **Occupant Notification** - Distribute and obtain receipt of the EPA lead pamphlet website (www.epa.gov/lead/pubs/brochure.htm) to affected occupants between 7 days and no more than 60 days before work begins. Notices must also be posted for work in common areas.
3. **Certifications** - All work must be completed by Lead Renovators certified by the Washington Department of Commerce or trained by such individuals to use lead-safe

work practices for their task. The department must also be a certified firm. EH&S maintains all certification records to verify current status.

4. **QA/QC** – EH&S must perform cleaning verification at the conclusion of each project. At the discretion of the Lead Program Manager, EH&S may conduct additional air monitoring, dust wipe sampling, visual inspections and review of work practices.
5. **Recordkeeping** – All associated documents including the Lead Work Plan, worker training certificates, daily logs and the occupant confirmation receipt of the EPA lead pamphlet must be submitted to the EH&S Lead Program Manager for archive.

7.2 Lead Risk Assessment and Abatement

Lead-based Paint Condition Assessments

The EH&S Lead Program Manager, will periodically inspect and document the condition of lead-based paints at the WSU student apartments and Children's Center. EH&S will report the results and offer recommendations to the department which operates the facility. Inspections and reporting will be conducted by a licensed Lead Risk Assessor and reported in accordance to HUD guidelines.

Lead Abatement

Lead abatement is defined as a means or measure designed to permanently eliminate lead-based paint hazards. At WSU, these conditions would be identified and/or addressed by the EH&S Lead Program Manager. Currently, WSU is not equipped to perform lead abatement work in-house. EH&S will advise the affected department of lead abatement options.

8.0 Contractors

WSU must provide a lead survey to all contractors submitting a bid to undertake any construction, renovation, remodeling, maintenance, repair, or demolition project that disturbs suspect lead-containing materials. Facilities Services Capital Project Managers must ensure the survey is completed by EH&S, or a consultant approved by EH&S, and given to the contractor prior to bid.

Thereafter, contractors are responsible for evaluating and controlling lead exposure as applicable for their personnel and their subcontractor's personnel. Contractors may be required to submit a lead work plan to EH&S should there be a risk of lead exposure to WSU employees, students, campus visitors or children in the project vicinity.

Public works projects involving child-occupied facilities and target housing must be reviewed by EH&S prior to bid.

ATTACHMENTS

LEAD WORK PLAN
(Lead in Construction)

Please complete prior to any project that disturbs paint or other suspect lead materials. Use back of page if you need more room.

Project Name: _____ Project Manager: _____

Work Order/Project Number: _____ Start Date: _____ Completion Date: _____

Project Name/Description: _____

Lead Competent Person: _____ Shop: _____

Employee: _____ Shop: _____

What activities will disturb lead: _____

Respiratory protection: None Half Face APR Full Face APR PAPR

Work practices: scraping sanding power washing abrasive blasting demolition

Specific work practices: _____

What engineering controls/ventilation will be used: _____

What type of enclosure will be used: _____

Will a shower be on-site: yes no Will warning signs be posted: yes no

What personal protective equipment will be used: _____

Describe waste handling procedures (consult with EH&S): _____

Competent Person Signature: _____ Date: _____

Lead bulk sample #/XRF reading: _____ mg/cm² Bulk: _____ (mg/kg, ppm, %) Substrate: _____

Lead bulk sample #/XRF reading: _____ mg/cm² Bulk: _____ (mg/kg, ppm, %) Substrate: _____

Has employee exposure previously been determined: yes no Air results: _____ Negative

Air monitoring sample numbers: _____ Where: _____ Date: _____

How is current project similar to earlier exposure assessment? _____

Individual responsible for air monitoring: _____ Analytical lab: _____

Please send form to EH&S via email to Matthew McKibbin, mrmckibbin@wsu.edu

LEAD WORK PLAN
(Target Housing and Child-Occupied Facilities)

Please complete prior to any project that disturbs paint or other suspect lead materials. Use back of page if you need more room.

Project Name: _____ Form completed by: _____

Work Order/Project Number: _____ Work Start Date: _____ Work Completion Date: _____

Project Location/Description: _____

Certified Lead Renovator(s): _____ Non-certified Worker(s) _____

Employee: _____ Employee: _____

Employee: _____ Employee: _____

Have non-certified workers been trained in the applicable skills for this job? Yes No

Has non-certified worker training been documented and approved by EH&S? Yes No

Which lead-based paints will be disturbed (color/location)? _____

Lead content of paint: XRF: _____ mg/cm² Bulk: _____ (mg/kg, ppm, %) Substrate: _____

Occupant Notification

Affected occupants notified and presented with EPA Renovate Right Pamphlet? Yes No

Receipt of occupant notification must be included in work plan. Pamphlet must be distributed between 7 and 60 days prior to commencement of work.

Work Practices/Controls

Describe the restricted lead work area. Include security measures and if occupants will be present during work:

Work practices: scraping sanding power washing abrasive blasting demolition

Additional specific work practices: _____

Prohibited work practices: 1) Open flame torch burning 2) Use of heat guns >1,100 °F 3) Power sanding/grinding/planning, needle guns, abrasive blasting and sandblasting without HEPA vacuum attachment.

What engineering controls/containment methods will be used to prevent the spread of dust (include with sketch)?

Where are warning signs posted?: _____

Note: Be specific. Draw your containment and/or restricted work area, decon area, windows to be sealed etc. Will stick mats be used? What kind of dust control methods will be used?

EH&S Comments: _____

Employee Exposure Monitoring

Has employee exposure previously been determined: Yes No

If NO:

Individual responsible for air monitoring: _____ Analytical lab: _____

Note: Use Attachment C for respiratory protection requirements. Consult with EH&S for other PPE requirements.

If YES (attach previous laboratory data):

Was negative exposure determined? Yes No

If relying on previous exposure data, how is current project similar to earlier exposure assessment (if applicable):

Note: All negative exposure assessments (NEAs) must be approved by EH&S prior to use

PPE/Hygiene

Respiratory protection: None Half Face APR Full Face APR PAPR

Will hand/face washing be available on-site: Yes No If not, where? _____

Are showers required? Yes No If so, where? _____

What personal protective equipment will be used? _____

Waste

Describe waste handling procedures: _____

Dangerous Waste? (consult with EH&S) Yes No

POST-WORK CHECKLIST

For Certified Lead Renovator

1. Conduct post-work visual inspection. The work area needs to be clean!
2. Contact EH&S to conduct post-renovation cleaning verification
3. Submit daily logs to EH&S

I certify that to the best of my knowledge, the above information is correct and work was completed according to this work plan using EPA lead safe work practices:

Certified Lead Renovator: Name _____ Signature: _____ Date: _____

For EH&S 3rd Party Use:

Is negative exposure assessment accepted (if, applicable)? Yes No

Has job passed post-renovation cleaning verification? Yes No

Notes: _____

EH&S 3rd Party: Name: _____ Signature: _____ Date: _____

**Lead Management Program
Washington State University
Respirator Selection Table**

Trigger tasks listed below are assumed to result in the corresponding lead levels and require the minimum respirator until air monitoring demonstrates a lower exposure. For known lead exposures, the listed respirator or one providing a greater protection factor should be used.

Trigger Task	Airborne Lead Levels	Minimum Respirator
Manual demolition of structures with lead coatings	$\leq 500 \mu\text{g}/\text{m}^3$	1/2 face air purifying respirator with HEPA filters
Manual scraping of lead coatings		
Using power tools equipped with dust filtration to clean lead coatings		
Spray painting using lead paint		
Using heat guns on lead coatings		
Manual sanding of lead coatings		
Burning lead	$500\text{-}2500 \mu\text{g}/\text{m}^3$	Tight fitting powered air purifying respirator with HEPA filters
Using lead containing mortar		
Rivet busting where lead coating is present		
Using power tools not equipped with dust filtration to clean lead coating		
Cleanup after using dry expendable abrasive blasting		
Moving and removal of enclosures used for abrasive blasting		
Abrasive blasting lead coatings	$\text{greater than } 2500 \mu\text{g}/\text{m}^3$	Full face supplied air respirator in pressure demand mode
Welding lead coatings		
Cutting lead coatings		
Torch burning lead coatings		

Medical Surveillance Declination Form

Memorandum

To: Environmental Health and Safety
Campus Mail Stop 1172

From: _____

Date: _____

Subject: Medical Surveillance – Lead

I acknowledge that I have been and will be assigned to projects where I may be working with or exposed to lead -containing materials.

I acknowledge that I have been advised of and understand the dangers inherent in being exposed to lead -containing materials.

I also understand that exposure to lead-containing materials can cause kidney, reproductive, nerve and other physiological damage. I acknowledge that I have received training in use of procedures and equipment to protect others and myself. I covenant and faithfully agree to take all precautions required of me.

I understand and acknowledge that monitoring of lead and zinc protoporphyrin levels carried out according to guidelines in WAC 296-62-07725 are helpful in providing protection from lead hazards. I acknowledge and verify that my employer has made such a medical surveillance available at no cost to me.

I acknowledge that WSU has made available ongoing lead medical surveillance, but I hereby refuse to submit to such medical examination for personal reasons not in anyway associated with race, religion, handicap or other protected activity.

Date

NIOSH Method 7082 – Lead by Flame AAS

WORKPLACE HAZARD ASSESSMENT CERTIFICATION FORM

Instructions: Complete form using Personal Protective Equipment Hazard Assessment Guidelines. Completed form is to be retained for departmental records.

Person conducting the hazard assessment: **Matt McKibbin**

Date of hazard assessment: **2/19/16**

Work Activity Assessed	Hazard(s) Identified	PPE Selected (Make & Model #)	Training
Good Faith Asbestos/Lead Surveys and 3 rd party oversight (throughout campus)	Falls	Flat/low pitched roofs with parapets <39" - Use safety watch system. One person will act as a safety watch while the other conducts required sampling	Acting safety watch: Competent Person (fall protection) Others: Fall protection user/awareness training
		High pitched roofs and scissor lifts: Fall restraint or fall arrest system – SALA 1231106 harness	Fall protection Competent Person when work plan is required. Fall protection user/awareness training otherwise.
			Ladder safety
	Penetration	Nitrile coated work gloves or similar	Hands-on for correct use and maintenance
		Boots with slip and puncture resistant soles and/or safety toes.	Hands-on for correct use and maintenance
	Trenches and Shoring	Possible fall protection considerations (personnel will not enter trenches >=4')	Trench and excavation Competent Person

WORKPLACE HAZARD ASSESSMENT CERTIFICATION FORM

Instructions: Complete form using Personal Protective Equipment Hazard Assessment Guidelines. Completed form is to be retained for departmental records.

Person conducting the hazard assessment: **Matt McKibbin**

Date of hazard assessment: **2/19/16**

Work Activity Assessed	Hazard(s) Identified	PPE Selected (Make & Model #)	Training
Good Faith Asbestos/Lead Surveys and 3 rd party oversight (throughout campus)	Noise (e.g. mechanical rooms, server rooms)	Wear appropriate hearing protection needed to reduce exposure below 85dB.	Annual hearing conservation training
	Asbestos	Assigned by Competent Person. Half-face tight fitting APR or full-face APR with HEPA filter	Annual fit test, medical approval and respirator training. AHERA Building Inspector.
	Confined spaces	(personnel will not enter permit required confined spaces)	Confined Space Competent Person
	Overhead	Hard hat – meets ANSI Z89.1	Hands-on for correct use and maintenance
	Impact	Eye protection – Meets ANSI Z87+ standard for impact and D standard for dust protection	Hands-on for correct use and maintenance
	Ergonomics		Hands-on task specific training

WORKPLACE HAZARD ASSESSMENT CERTIFICATION FORM

Instructions: Complete form using Personal Protective Equipment Hazard Assessment Guidelines. Completed form is to be retained for departmental records.

Person conducting the hazard assessment: Matt McKibbin

Date of hazard assessment: 2/19/16

Work Activity Assessed	Hazard(s) Identified	PPE Selected (Make & Model #)	Training
Good Faith Asbestos/Lead Surveys and 3 rd party oversight (throughout campus)	Laboratory hazards: Biological/Chemical/Radiation	Varies by laboratory. Read lab signage for appropriate PPE and contact PI and/or department for access restrictions	
	Non-ionizing radiation		Contact Facilities Services for list of NI radiation zones on roofs. Follow safety protocols and signage for each location
	Electrical	Use equipment with GFCI protection in abatement areas.	Lockout/tagout
	Lead	Assigned by Competent Person. Half-face tight fitting APR or full-face APR with HEPA filter	Lead Awareness with hands-on training Annual fit test, medical approval and respirator training.

I, _____, certify that the assessment of the identified work activities has been performed. **Date:**

Signature

CHAPTER 20 LOCKOUT / TAGOUT (LOTO)

A. PURPOSE and SCOPE:

This Chapter establishes responsibilities, training requirements and procedures intended to reduce or eliminate injuries resulting from stored or residual energy and/or the sudden activation of equipment while EHS personnel are engaged in maintenance activities.

B. REFERENCES:

WAC 296-803 Lockout/Tagout

WSU SPPM 3.86 Control of Hazardous Energy Sources

C. APPENDICES:

- a. Appendix A – LOTO Procedure
- b. Appendix B – Forcible Lock Removal Form
- c. Appendix C – LOTO Program Procedure Inspection Form

D. RESPONSIBILITIES

Supervisors: enforce the Control of Hazardous Energy/LOTO program and are responsible for the following:

- Understanding that failure to lockout hazardous energy constitutes a serious hazard.
- Ensuring affected employees receive appropriate training in LOTO procedures *prior to working on equipment requiring the control of hazardous energy.*
- Providing the necessary equipment for lockout procedures.
- Developing LOTO procedures for equipment in their areas of responsibility.
- Evaluating each affected employee's conformance to program requirements and documenting nonconformance at least annually.
- Requesting retraining for nonconforming employees and initiating disciplinary action when necessary.

Employees: adhere to all aspects of this program and are responsible for the following:

- Conforming to lock out procedures when working on equipment or in areas where hazardous energy is, or may be present.
- Removing locks whenever: 1) they (and others) are not working on the equipment, 2) at the end of the work shift, or 3) at the completion of the project. It is acceptable to leave personal locks in place on a job requiring more than one shift to complete, provided that practice does not interfere with equipment start up and re-commissioning.
- Informing their supervisor when equipment or facility components in their

work areas requiring lockout procedures are identified.

- Reporting to their supervisor any near miss or incident resulting from inadequate lockout procedures.
- Attending and participating in lockout/tagout training.

Note: EHS' Occupational Health and Safety (OHS) unit provides assistance developing and implementing LOTO programs.

E. TRAINING

EHS' OHS unit provides basic LOTO training and consultation upon request. Supervisors are responsible for providing training to affected employees on specialized systems and equipment. All training must be documented. Retraining may be required when:

- There is a change in job assignment.
- An addition or modification of equipment or processes presents a new hazard.
- LOTO procedures are modified.
- Annual inspection of employee performance indicates the employee's knowledge and understanding of LOTO procedure is inadequate.

"Authorized" or "affected" employees are responsible for understanding the purpose and function of the LOTO program, have the knowledge and skills necessary to carry out the program, recognize hazards, methods and means to isolate hazardous energy, and following the LOTO program procedures.

F. GENERAL LOTO PROCEDURES

This section outlines various control procedures available to safely isolate, de-energize, secure and lockout equipment for routine maintenance and service. In all cases, these general steps shall be followed:

Cord and Plug Connected Equipment. Equipment powered by a cord and plug inserted into an electrical outlet must be disconnected before maintenance and service activities. The plug must be under the exclusive control of the authorized person performing the maintenance activity. If exclusive control cannot be maintained, then a plug lock shall be used. Additionally, any stored energy in the machine (e.g. hydraulic, pneumatic, electrical, potential, kinetic etc.) must be de-energized before starting work. Energy reaccumulation must also be prevented.

Single Source Lockout Procedure: This procedure applies to routine tasks using equipment that can be locked-out with a single lock only. Specific written procedures are not required under this condition.

1. The authorized employee completing the lockout must know the type and

magnitude of the energy associated with the equipment, hazards associated with the energy, and the means or methods to control it.

2. Notify affected employees the equipment is under maintenance or service and will be in a locked-out condition and no one is to attempt to manipulate the controls unless done while verifying energy nullification.
3. Inspect and ensure the equipment is safe to shut down.
4. Shutdown the equipment. In some cases, Facilities Dispatch at 5-9000 or Housing Dispatch at 5-1541 must be notified that equipment is being shut down, if it is connected to the central computer control, or other remotely controlled system. (Note: for variable speed controlled equipment, the system must be shut down by an electrician to prevent starter and controller damage).
5. Identify and engage the energy isolating device needed to control the energy to the equipment. The equipment will now be physically isolated from the energy source. The authorized employee must make sure the lockout device(s) hold(s) the energy- isolating device in a "safe" or "off" position.
6. Verify the equipment is isolated from its energy source. Attempt to start the equipment using the control switch before work is started (if applicable). If the equipment does not start, return the switch to the "off" position to ensure the equipment does not start-up when the equipment is re-energized. If the equipment does start up, then it is apparent that not all energy sources, or the wrong energy sources, have been de-energized and the correct lockout procedure must be identified before work can continue. Identify the correct isolation device(s) and repeat this step to verify isolation. Inform your supervisor of any mislabeled isolation devices.

Note: Remote isolation via the central computer system is a control switch and not considered a lockout condition.

7. The authorized employee(s) *applies their own personal lockout device*, locks and tags to the isolating device. Note: **DANGER Do Not Operate/Equipment Locked Out By Employee Name** tags must be completed in full before attachment to the lockout device. The name of the employee, their supervisor, and the date the tag was placed must be written on the front of the tag. The reason for the lockout is written on the back of the tag. For jobs where multiple employees cannot lock onto the lockout device, a lock box shall be utilized (see procedure below).
8. If the energy isolating device cannot accommodate multiple personal lockout devices and/or hasps, a crew lockout with a lock box or similar lockout device is required. If a box is used, then special procedures apply (see Section G) to clearly identify the lockout as specified in the equipment specific written procedures.
9. Any **stored energy**, such as that found in springs, rotating fans or fly wheels, hydraulic systems or compressed air or gas lines must be dissipated or restrained by either re- positioning, blocking or bleeding down. If a device (e.g. drain valve) is operated to remove stored energy then the device shall be tagged and left in the "open" position. The tag shall note the date, the authorized employee and job, stating the reason it was left open. **Note: Additional energy isolation controls or procedures apply when servicing equipment with the potential for energy re-accumulation.**
10. After completing maintenance and/or service, the authorized employee(s)

inspects the area and notifies affected employee(s) that lockout devices are to be removed and the equipment reenergized. Notify Facilities dispatch at 5-9000 or Housing dispatch at 5-1541 that lockout devices are removed.

11. Lockout devices are only removed by authorized employees. A lock may be removed only by the person who applied it. See forcible lock removal procedure below for exceptions.

Tag-out Procedures:

Tag-outs are only allowed where lockout procedures cannot be completed. The following requirements must be met before tag-outs are allowed:

- The tag-out device must be attached where a lockout device would have been put and is shown clearly that the energy isolation device is in the off or safe position.
- Configuration of the equipment makes it impossible to use a lock.
- Tag-out tags must be durable and able to withstand environmental conditions.
- The means used to attach the tag to the energy isolating device isn't reusable, is self-locking, can be attached by hand, similar to a nylon cable tie.
- When tags are applied, they may be removed only by the person who applied it. See forcible lock removal procedure below for exceptions.
- Tags must never be bypassed, ignored or otherwise defeated.
- Tags must be legible and understandable by all authorized and affected employees.
- Additional safety measures for isolation with a tag-out will improve employee protection. These should be implemented wherever possible. Examples are; removing part of the isolating circuit, blocking a control switch, removing a valve handle, etc.

Equipment Testing Procedures – Working on Activated Systems: When locks must be temporarily removed from lockout devices and the equipment energized to test or position equipment components, the following sequence of steps must be followed:

- Clear the equipment of all tools and materials.
- Employees remove their locks and tags and go to a safe position.
- Affected employees thoroughly review the activation procedure to be used.
- Verify that no one has entered or is working in the area to be energized.
- Energize the equipment and proceed with testing or positioning.
- De-energize the equipment following the *General Lockout or Equipment Specific Lockout Procedures* before continuing maintenance or service activities.

Working on Energized Circuits: Exposed live parts may be worked on only by qualified persons and only when de-energizing the components increases the work hazard, or makes the work task infeasible due to equipment design or operating limitations. Some examples include alarm circuits, life support

systems, electrical circuit testing and checkout, etc. This variance is to only be used as the last resort and must be approved in advance by the supervisor after review. Procedures and supervisor approval must be documented. Use of proper PPE is required.

Shift Changes and Extended Lockouts: For equipment requiring lockout for more than one day, or multiple shifts, personal locks may be left on equipment if there is no chance the equipment will be restarted until repairs are completed and the employee assigned the personal lock will be at the job site to commission the equipment for start-up. If this condition cannot be met, then a department lock shall be placed on the equipment with an identification tag stating the reason the equipment is locked out and who is authorized to start the equipment back up. For lockouts utilizing the lockbox, the department lock may be applied, before all personal locks are removed. The lockout is not to be modified during this time.

Forcible Lock Removal Procedure: If an employee leaves the work-site without removing his/her lock from a lockout device and the equipment must be returned to service, the procedure and form in Appendix B shall be used and documented by the Program Manager.

G. SPECIAL EQUIPMENT SPECIFIC LOCKOUT/TAGOUT PROCEDURES

These special procedures apply to equipment that meets one or more of the following conditions:

- Contains more than one energy source or more than one energy isolating device is required to achieve a lockout condition.
- Has potential for energy re-accumulation.
- Multiple personnel (crews) are locking out onto one device that cannot accommodate multiple personal locks.

NOTE: These procedures may be developed by supervisors and integrated permanently into this APP chapter and/or documented on each occurrence by completing the *Lockout Procedure Form* found in Appendix A. Instructions for completing the form follow.

Lockout Procedure Form - Instructions

1. Note and list the conditions requiring special LOTO procedures.
2. Provide equipment specific comments and instructions necessary to achieve a safe lockout condition. This may include, but is not limited to any order of operations, specific lockout equipment, required safety devices and/or PPE.
3. Supervisors must review all special LOTO procedures and ensure the form is presented to all authorized and affected employees in writing, prior to implementation.
4. Follow the previously identified procedures for a single source lockout and document special procedures in the *Lockout Procedure Form*. Add additional

pages for text, drawings and/or schematics as necessary.

5. Post the lockout form on the job site as mentioned above, preferably with the lock box.
6. The primary authorized employee locks out the equipment at all energy sources as required. More than one employee may assist with the lockout, but the primary authorized employee is responsible for the lockout overall.
7. The primary authorized employee places the keys used in the lockout procedure in the lockbox, affixes a hasp to the box and places the primary lockout lock on the box and retains the key.
8. Other, affected employees then place their personal locks on the lockbox. This secures the jobsite and equipment for all employees until the lockout activity is complete and all employees remove their personal locks. The authorized employee reverses the lock out steps as outlined directly above and in the single source lockout section of this chapter.

H. CONTRACTOR LOCKOUT AND INTERFACE

The WSU contract manager for service contracts or the WSU project manager and construction manager assigned to public works construction contracts, as applicable, are responsible for:

- Verifying the Contractor uses a properly designed written program for LOTO and hazardous energy control. Note: Do not dictate contractor means and methods for lockout, if conditions are deemed unsafe to proceed, stop work and contact the EHS Occupational Health and Safety Unit at 335-3041.
- Inform the contractor of applicable WSU LOTO procedures and inform affected WSU personnel of the Contractor's LOTO procedures. Ensure that all employees understand and will follow the restrictions of the other employer's energy control program.
- Verifying the contractor understands it is the contractor's responsibility to ensure the energy source is isolated and locked out completely and that all safety procedures are followed including the safe release of re-accumulated and/or residual system energy.
- Verifying the contractor's locks are labeled to differentiate the contractor's locks from WSU locks.
- Ensuring that energy conveyance systems related to contract work are identified in the contract documents.
- Ensuring the contractor provides a 14 day (or other agreed upon time period) notice, in writing prior to shut down of energy conveyance systems supplying occupied WSU facilities.
- Ensuring that WSU authorized employees conduct the work to initially isolate the energy conveyance system unless written approval is given allowing the contractor to perform the isolation work.
- Ensuring that WSU authorized employees conduct the work to re-energize the system and return it to normal service, unless written approval is given allowing the contractor to perform the isolation work.

I. NEW CONSTRUCTION AND MAJOR ALTERATIONS

The WSU contract manager and/or other WSU personnel assigned to project design must ensure that any new construction or major alterations to existing equipment are designed or modified to accept a lockable device for lockout compliance. In addition, new or modified lockout procedures shall be provided to the affected WSU Department(s) for the modified or new equipment and systems.

J. LOCKOUT EQUIPMENT

All equipment used in lockouts must be distinctive in appearance and not used for any other purpose. It must also be able to withstand environmental conditions and be standardized for the WSU Department/Unit applying the locks, with the same color, shape and size. Individual locks *must* identify the person applying the device.

K. PERIODIC INSPECTION

Annual (or more frequent) evaluation of all employees applying hazardous energy control devices is to be performed by supervisors, using the attached LOTO Procedure Inspection form (Appendix C) to evaluate the program's effectiveness. Key areas to cover during the review include:

- Verifying that employees understand and follow energy control procedures, including employee interview questions.
- Reviewing documentation for accuracy and adherence to established procedures.
- Observe devices used in LOTO procedures.

Complete Appendix C and provide the completed document to the EHS Occupational Health and Safety lockout/tagout program manager. A copy of the completed inspection form and summary of corrective actions must be submitted to all affected employees and the Program Manager in writing.

L. RECORDS RETENTION:

Completed lockout procedure (Appendix A), Forcible Lock Removal Form (Appendix B), periodic inspection forms (Appendix C) and associated communication documents must be retained by the Program Manager for at least one year [no specific retention requirements].

APPENDIX A LOCKOUT PROCEDURE

THE FOLLOWING PROCEDURE MUST BE FOLLOWED WHENEVER EQUIPMENT IS TO BE REPAIRED OR SERVICED IN SUCH A MANNER THAT IF IT WAS TO START UP UNEXPECTEDLY THE WORKER REPAIRING OR SERVICING IT COULD BE INJURED.

BLDG NAME:		ROOM #:			LOCATION:				
WORK REQUEST #:					PROJECT #:				
PERMANENT LOCKOUT PROCEDURE NUMBER (if applicable):									
EQUIPMENT NAME:					EQUIPMENT #:				
MAINT/SERVICE TO BE PERFORMED:									
KEY CUSTOMER AND AFFECTED EMPLOYEES NOTIFIED?					YES <input type="checkbox"/>		NO <input type="checkbox"/>		DATE NOTIFIED:
DATE	PRIMARY AUTHORIZED PERSON		SUPERVISOR			DEPT/CONTACT PERSON			
ISOLATION POINT OR DEVICE/ITEM DESCRIPTOR (BREAKER/VALVE/BLIND/ ETC)	DESCRIBE HAZ. ENERGY (STEAM, ELECTRICITY, HYDRAULIC, STORED ENERGY, ETC)		TYPE (CHAIN, LOCK, TAG, COVER, ETC)	LOCK ID # OR LOCK LOCATION	ISOLATED AND LOCKED BY (INITIAL)	ENERGY SOURCE DE-ENERGIZED?		VERIFI ED BY (INITIAL)	DATE
	TYPE	Magnitude				YES	INITIAL		
SPECIAL CONDITIONS:									
SPECIAL COMMENTS AND INSTRUCTIONS:									

**APPENDIX B FORCIBLE LOCK
REMOVAL FORM**

PURPOSE:

This form is to be used when an employee leaves the work-site without removing his/her lock from a lockout device and the equipment must be returned to service. This form is to be completed by a Unit Supervisor *only*.

Date of Action:

Time of Action:

Purpose/Explanation:

Affected Equipment and Location:

Employee Name:

Employee's Supervisor

Employee Contact Information:

Supervisor verified that employee is not at worksite (Y/N):

Supervisor verified that employee is not at work (Y/N):

Supervisor attempted to contact employee at home phone/cell (Y/N):

If not contacted, verified worksite is vacant (Y/N):

Lock forcibly removed (Y/N):

Copy of this form posted at worksite (Y/N):

Employee notified next day at work (Y?N):

Comments:

Name of Supervisor removing lock/Date:

Unit Director's Signature:

**APPENDIX C
LOCKOUT TAGOUT PROGRAM PROCEDURE INSPECTION FORM**

LOCKOUT INSPECTION PROCEDURE

Equipment To Be Locked-Out		Location	
Supervisor	Date	Time	
List of Authorized Employees Involved			
Description of Maintenance / Repair			
In-Field Observation		Yes	No
1. Have all affected employees been notified?			
2. All energy sources de-energized and isolated?			
3. Lock, lockout device, and tags applied?			
4. System tested for shutdown prior to start of work?			
5. Is written lockout procedure in use?			
6. Are lockout devices removed and equipment returned to operation?			

Employee Interview

- 1. When should lockout procedures be used?**
2. What is a lockout device?
3. What is the approved locking device?
4. What is an energy isolating procedure?
5. What is the procedure to remove lockout devices and return system to operation?
6. What is the procedure for lock removal when a person who applied the lock is unavailable?

Notes	
Supervisor	Date

CHAPTER 21 MACHINE AND TOOL SAFETY

A. References

- a. SPPM: 3.62, Machinery Safeguards.
[SPPM Equipment Safety and Machinery Safeguards.htm](#)
- b. WAC: 296-806, Machine Safety.
[WAC Chapter 296-806](#)
- c. WAC 296-807, Portable Power Tools.
[WAC Chapter 296-807](#)
- d. WAC Chapter 296-155, Part G, Tools Hand and Power
[WAC 296-155-360](#)

B. Scope

This chapter establishes safe work practices while operating machines and/or tools. Machines, tools and their moving parts present a workplace hazard. Installed and used properly, protective safeguards, engineering controls and administrative controls protect workers by helping to reduce machine and tool hazards.

Protective safeguards and engineering controls are generally physical barriers that either enclose or isolate machine and tool hazards. Safeguarding requirements are specific to the hazard(s) controlled and safeguarding methods used to control the hazard(s). Method and equipment specific requirements are further detailed in the WAC(s) referenced above.

Examples of protective safeguards and engineering controls include: machine/tool guards, blade guards, railings, auto braking and shut off devices, ventilation equipment, etc.

Examples of administrative controls include: job rotation, work practices, warning signs, etc.

C. Responsibilities

Supervisors are responsible to ensure:

- Machines and tools in the workplace are assessed for hazards and required PPE.
- Required personal protective equipment is documented on a Workplace Hazard Assessment Form such as: Hazard Assessment Certification Form Chapter 24 Appendix A.
- Employees are trained how to use PPE and engineering controls, and follow administrative controls. PPE, engineering and administrative control training shall be documented on a Training Certification Form such as PPE Training Certification Chapter 24 Appendix B.
- Employees are trained in the proper and safe use of machines and tools and their protective safeguards and engineering controls in accordance with the manufacturer's instructions and [WAC Chapter 296-806](#), [WAC Chapter 296-807](#) and [WAC 296-155-360](#) requirements.

- Machines and tools are equipped with appropriate safeguards and safeguard are used per [WAC Chapter 296-806](#) , [WAC Chapter 296-807](#) and [WAC 296-155-360](#).
- Inspection checklists are developed for machines, tools, protective safeguards and engineering controls in accordance with manufacturer's and applicable WAC (requirements) and they are periodically inspected and the inspection documented, filed and retained as specified in Chapter 16.
- Machines and stationary and portable tools with reported inadequate or non-functioning safeguards and/or engineering controls are tagged with a hazard notification sign or an out-of-service sign, and when necessary removed from the use area or disconnected from its power source.
- Employees conform to the following requirements.

Employees who use machines shall:

- Inspect and confirm operation of machine and tool safeguards prior to each use in accordance with applicable WAC requirements.
- Disconnect the energy source using the lockout procedure when inspecting or maintaining machines and tools in accordance with Chapter 20 LOCKOUT TAGOUT of this APP Manual.
- Use machines, tools and protective safeguards in accordance with the manufacturer's instructions.
- Maintain machine and tool safeguards in accordance with WAC for Machine Safety at: [WAC Chapter 296-806](#), [WAC Chapter 296-807](#) and [WAC 296-155-360](#).
- Use applicable personal protective equipment when operating machines and tools in accordance with the applicable hazard assessment training and the manufacturer's instructions.
- Only remove safeguards during maintenance, service, and repairs when power sources are disconnected and controlled in accordance with Chapter 20 LOCKOUT TAGOUT of this APP Manual.
- Return all safeguards to their correct location and confirm operation after maintenance activity is complete.
- Do not to wear loose clothing, neckties, rings, or other jewelry which could be caught or entangled in moving parts.
- Wear caps, hair nets, or other protection which confines hair that is long enough to be caught or entangled in moving parts.
- Report all machine and tool hazards and non-functioning safeguards to supervisor immediately and disconnect and lockout the energy source and tag out the machine with an out of service label.

D. Training

Training will be provided to workers once at the time of hire and documented and retained in accordance with Chapter 30: SAFETY AND HEALTH TRAINING.

Re-training will be required when:

- There have been changes in the workplace, such as introducing new processes and/or equipment;
- Changes in the types of machines, tools or equipment;
- And/or when an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the machine, tool or equipment.

Training will require participants to demonstrate an understanding of the operating instructions, the safety requirements for using the machine and tool and a proficiency using the machine and tool while applying safety measures. Training information will include:

- Inspection requirements prior to the use of each machine and tool;
- The hazards associated with the machine and tool;
- The required safeguards, controls and general safety procedures for each machine and tool used; and.
- The required PPE and its use related to each machine and tool referencing APP Manual Chapter 24.

CHAPTER 22 MOTORIZED VEHICLES AND EQUIPMENT

A. References:

1. [SPPM 35.00 Motor Vehicle Safety with Links to Driver Requirements and Post Accident Guidelines](#)
2. [BPPM 7.10 Motor Vehicle Safety](#)
3. [BPPM 7.20 Motor Vehicle Accidents](#)
4. [RCW 46.61.667 Using a wireless communication device while driving.](#)

B. Purpose and Scope: This chapter establishes operating requirements for motorized vehicles and equipment. EHS employees must understand this chapter's contents, and the University's policies and procedures for operating motorized vehicles before operating University vehicles.

C. Responsibilities:

Supervisors are responsible for:

- Ensuring only employees meeting the qualifications below operate vehicles on official University business;
- Ensuring employees are trained upon this chapter's requirements and the BPPM and SPPM chapters listed in the above reference section; and,
- Adhering to the qualifications and requirements listed herein when operating vehicles on official University business.

Employees are responsible for:

- Understanding this chapter's requirements and the BPPM and SPPM chapters listed in the above reference section;
- Adhering to the qualifications and requirements listed herein when operating vehicles on official University business.

Employees not adhering to this chapter's qualifications and requirements may be subject to disciplinary action including deductions from salaries or other allowances due, suspension without pay, or termination of employment.

D. Training: For specialized motorized vehicles and equipment (e.g. passenger vans, vehicles with a Gross Vehicle Weight Rating (GVWR) of 26,001 pounds or more, trailers with a GVWR of 10,001 pounds etc.), employees are required to participate in additional training and/or obtain additional (e.g. commercial) licensing.

E. Qualifications:

1. Only approved WSU employees, students or designated volunteers may drive state or personal vehicles on official University business.
2. Drivers must possess a valid driver's license.
3. Drivers must verify at least 2 years driving experience.

4. State law prohibits individuals under 18 years of age from performing jobs requiring motor vehicle operation.
5. WSU drivers may only transport individuals traveling on official state or University business. EXCEPTION: Drivers who use privately-owned vehicles for official University business may provide rides for nonofficial passengers, provided that the drivers have private insurance that covers the passengers.
6. Drivers may not transport non-college-enrolled high school or younger children in full-size passenger vans or other specialty vehicles not meeting state and federal school bus standards.
7. See additional BPPM 7.10 qualifications and requirements to operate a full size passenger van.
8. Total combined driving time for all drivers in a vehicle must not exceed 10 hours in a single day.

F. Requirements:

1. Always inspect your vehicle or equipment before and after daily use.
2. Do not drive or ride motorized vehicles or equipment outside of a proper seat (unless vehicles are designed for standing).
3. Always wear seat belts.
4. Drive or ride seated at all times (unless vehicles are designed for standing).
5. Watch for pedestrians and give them the right-of-way.
6. Do not operate vehicles or equipment unless you are specifically licensed, certified and/or trained.
7. Obey all traffic regulations including RCW 46.61 rules concerning use of hand held devices.
8. Drivers are responsible for all citations or infractions received while operating vehicles on University business.
9. Never mount or dismount moving vehicles or equipment.
10. Do not dismount any vehicle without first shutting down the engine and setting the parking brake.
11. Drivers/equipment operators and spotters must agree upon and mutually understand hand signals.
12. Operators are responsible for the stability and security of his/her load.
13. Report motorized vehicle accidents per SPPM 35.30 Post Accident Guidelines. This includes accidents involving personal vehicles if used for University business. *Note: A University traveler involved in an accident while driving a privately-owned vehicle on University business is not reimbursed for deductibles and the traveler's insurance is considered primary.*

CHAPTER 23 PESTICIDE EXPOSURE CONTROL PLAN

References.

Pesticides - Worker Protection Standard WAC 16-233:

<http://apps.leg.wa.gov/wac/default.aspx?cite=16-233>

Pesticides Worker Protection Standard: [WAC 296-307 Part I](#)

<http://apps.leg.wa.gov/wac/default.aspx?cite=296-307>

Cholinesterase Inhibiting Pesticide Monitoring Requirements

<http://lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/default.asp>

WSU SPPM S3.00 Shop and Agriculture Safety:

http://old-www.wsu.edu/manuals_forms/HTML/SPPM/3_Shop-Ag_Workplace_Safety/3.00_Contents.htm

WSU BPPM 45.65 Pesticide Policy Overview

http://public.wsu.edu/~forms/HTML/BPPM/45_Research/45.65_Pesticide_Policy_Overview.htm

Appendices:

Appendix 1 – WSU New Hire Checklist for employees working with pesticides

Purpose.

This plan intends to eliminate or reduce employee exposure to pesticides. Pesticides are any substance that is intended to prevent, destroy, control, repel or mitigate any pest organism whether it be plant, animal or virus (except viruses in or on humans or other animals). Pesticides may be used as a plant regulator, defoliant or desiccant and include spray adjuvants (e.g. surfactants, emulsifiers and anti-foaming agents).

Examples of pesticides include herbicides, insecticides, fungicides, rodenticides, disinfectants, fumigants and animal repellents.

Scope.

This exposure control plan covers EHS employees designated by the department as having reasonably anticipated occupational exposure to pesticides.

Responsibilities.

Supervisors

- Identify work activities with potential exposure to pesticides, including pre-application activities.
- Require that employees engaged in the previously identified work familiarize themselves with this APP chapter.
- Offer employees cholinesterase monitoring and testing as required.
- Provide employees pesticide exposure control training prior to assignment to tasks with potential exposure.
- Provide employees Personal Protective Equipment (PPE), for PPE selection and training information, please see this APP's PPE chapter.

- Ensures decontamination supplies/facilities are available whenever a pesticide was applied or a restricted entry interval (REI) was in effect in the last 30 days.
- Ensures pesticide application notification requirements are met per label and [WAC 296-307-12025](#) and [WAC 296-307-12030](#) requirements.
- Ensures workers, other than appropriately trained and equipped pesticide handlers, do not enter restricted areas until the REI (refer to pesticide label and [WAC 296-307-1215](#) and [WAC 296-307-12020](#)) has terminated.
- Ensure pesticide use is consistent with label directions.
- Ensure no pesticide is applied such that any person other than the appropriately trained and equipped handler shall contact the pesticide either directly or through drift (see also [WAC 296-307-13010](#), Restrictions during applications).
- Evaluate employee adherence to pesticide exposure control policy and initiate corrective action when necessary e.g. additional training and/or disciplinary action.

Note: The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) section 14 (b)(4) provides that a person is liable for a penalty under FIFRA if another person employed by or acting for that person violates any provision of FIFRA. The term "acting for" includes both employment *and contractual relationships*.

Employees

- Immediately inform their supervisor when (previously unidentified) tasks present potential pesticide exposure.
- Familiarize themselves with this APP chapter.
- Receive cholinesterase monitoring and testing as required.
- Attend and participate in pesticide exposure control training.
- Review available pesticide application information (e.g. notifications) and do not enter restricted areas until the REI (refer to pesticide label and [WAC 296-307-1215](#) and [WAC 296-307-12020](#)) has terminated, unless they are trained and equipped pesticide handlers.
- Use pesticides only if trained and per label directions.
- Ensure no pesticide is applied such that any person other than the appropriately trained and equipped handler shall contact the pesticide either directly or through drift (see also [WAC 296-307-13010](#), Restrictions during applications).
- Wear PPE and adhere to pesticide exposure control policies and procedures. Employees not conforming to pesticide exposure control policy may be subject to disciplinary action.

Training.

Employees that may be assigned to handle or use pesticides, or with a reasonable expectation of exposure must understand the contents of this APP chapter and receive pesticide exposure control training. Training is required upon initial employment (or within 10 days of assignment to tasks with exposure potential) and on an annual basis.

Employees must obtain the applicable Washington State Department of Agriculture (WSDA) applicator certification for the type of work and areas of pest control performed. Applicators must maintain their certifications through ongoing professional development course work as appropriated for their certification type.

Non-certified employees may perform certain pesticide applications only if under the direct supervision of a certified applicator. Certain pesticide labels may contain additional supervision requirements. Employees that will be expected to enter any field that has been sprayed with a labeled pesticide must receive pesticide safety information and hazard communication training prior to entry.

Requirements for Pesticide Handlers and Workers

A pesticide handler is any employee who mixes, transfers, loads, applies or disposes of pesticides. They may repair, adjust or clean pesticide equipment and may enter treated areas before the REI is met. The REI is the time after pesticide application during which entry to the treated area is restricted to properly trained and equipped employees. A pesticide handler must possess a WSDA pesticide certification.

A pesticide worker is any employee performing agricultural related work in an area where pesticides are or have been used in the past 30 days. Pesticide workers do not handle any pesticides or machinery with residues, do not have to possess a WSDA pesticide certification and may not enter treated areas (with limited exceptions) until the REI has been met.

Employers must ensure employees have access to:

- Restrictions during pesticide applications
- Restrictions after pesticide applications
- Notifications of pesticide applications (for agricultural and research applications, see [WAC 296-307-13015](#) for posting requirements)
- Specific information on individual pesticide applications
- Notifications of pesticide application to non-EH&S personnel
- Pesticide safety training
- Posted pesticide safety information
- Decontamination supplies, procedures and training
- Emergency exposure assistance

Cholinesterase Inhibiting Pesticides.

Cholinesterase inhibiting pesticides (CIP) interfere with an enzyme (cholinesterase) that regulates the activity of nerve impulses in humans and other animals. Employers must track employee handling (mixing, use, cleanup and disposal) of CIP and institute a monitoring program if any employee exceeds 30 hours of handling in any consecutive 30 day period. A list of CIP is found at the link in Section A of this Chapter.

Employers who use CIP must:

- Record the number of hours each employee handles CIP
 - Implement a medical monitoring program for any employee who exceeds 30 hours handling in any consecutive 30 day period
 - Identify a medical provider to provide medical monitoring services
 - Make cholinesterase baseline and periodic testing available
 - Investigate work practices when cholinesterase levels are depressed more than 20% of employees baseline
 - Remove employees from CIP work areas when recommended by medical provider
 - Provide training to covered employees
 - Report employee handling hours to medical provider
 - Maintain medical monitoring and other records for seven years

Pesticides Recordkeeping

Employers are to maintain pesticide related records and make them available to employees, their representatives and to regulatory agency personnel upon request.

Employers are to maintain the following records for at least seven years:

- Specifics of each pesticide application, whether applied by the unit or by an outside contractor
- Annual inventory of stored pesticides
- Pesticide purchases

APPENDIX 1

WSU NEW HIRE CHECKLIST FOR EMPLOYEES WORKING WITH PESTICIDES

*Pest Management Recommendations and Pesticide Testing*

If you work with pesticides - organic or conventional - or make pesticide recommendations, you need to be aware of **your legal responsibilities and liability**. For example, in Washington State, anyone who provides a written or verbal recommendation, for other than a home and garden pesticide, must have a current Washington State Pesticide License.

“Recommendation” is defined as ***any written or spoken statement which advises that a particular pesticide can be used to control a particular pest, or produce a particular result (such as a plant growth regulator or desiccant).***

“Pesticide” is defined as ***any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest (not just insects), or acting as a plant growth regulator, defoliant, or desiccant.*** (Source of the substance is irrelevant.)

Use the checklist below to guide you through the necessary educational and licensing steps.

BEFORE YOU APPLY OR TEST ANY PESTICIDE, OR MAKE A PESTICIDE RECOMMENDATION, VERBALLY OR IN WRITING:

- Access the WSU Employee Resources page at <http://ext100.wsu.edu/wsprs/employees/> to locate relevant training materials
- Read the WSU Pesticide Policy sections (BPPM 45.65-70) on that web site
- View the relevant training modules (A-C), after reading the policy
- If necessary, register for pre-license training at <http://pep.wsu.edu/>. Questions about license categories and endorsements should be directed to Carol Black at 509-335-9222 or ramsay@wsu.edu
- Obtain a current Washington State Department of Agriculture pesticide license, and endorsements, appropriate to the work you will be doing

AFTER PASSING THE LICENSING EXAMS:

- Make sure those you supervise (e.g., staff, A/Ps, students and volunteers) are in compliance with the WSU Pesticide Policy
- Keep your license current and add more endorsements if your work changes
- Contact WSU Environmental Health & Safety (<http://ehs.wsu.edu/>) specialists for additional training in workplace safety, respirator fit tests, etc.
- Make sure to keep your pesticide application records current, and on hand, for the 7-year record retention requirement
- If you are working with Experimental Use Pesticides, either obtain an individual permit or use the WSU collective EUP recordkeeping system. Use the disclaimer provided in the BPPM 45.70 when reporting EUP results to end users.

Contact John Reed, WSU Pesticide Coordinator, for consultation or assistance with questions related to any work in this area, at johnreed@wsu.edu or 509-335-9565

CHAPTER 24 PERSONAL PROTECTIVE EQUIPMENT

A. References

- a. SPPM: S3.00, Shop/Agricultural Workplace Safety; S3.21 Hearing Conservation; S3.24 Respiratory Protection. [SPPM S3.00 Shop/Agricultural Workplace Safety](#)
- b. SPPM: S3.10 Personal Protective Equipment, S3.14 Prescription Eyewear Program, S3.16 Safety-Toe Footwear. [SPPM S3.10 Personal Protective Equipment](#)
- c. EH&S Laboratory Safety Manual; Section IV: Standard Operating Procedures; D. Personal Protective Equipment; Workplace Hazard Assessment: PPE; Web Site; Workplace Hazard Assessment and Personal Protective Equipment Selection Charts.
<http://ehs.wsu.edu/labsafety/LabSafetyManual.html>
- d. [WAC 296-800-160, Personal Protective Equipment](#)
- e. [WAC 296-817-20015, Hearing Loss Prevention \(Noise\)](#)
- f. WAC 296-842, Respirators. [WAC 296-842, Respirators](#)

B. Appendices:

- a. Appendix A: Hazard Assessment Certification Form
- b. Appendix B: PPE Training Certification Form

C. Scope

This chapter establishes requirements for hazard assessments, evaluating whether hazards are present that require personal protective equipment (PPE). EH&S requires the use of personal protective equipment to protect employees from chemical, physical, biological and radiological hazards having the potential to cause injury or impairment.

Personal protective equipment must be selected and used when workplace hazards are not eliminated or controlled by engineering controls (i.e., guards, ventilation) and/or administrative controls (i.e., job rotation, work practices). Employees required to wear PPE must be trained on its proper use and limitations. This training must be documented.

D. Responsibilities

Supervisors are responsible for the following:

- Performing or designating an individual responsible for performing hazard assessments;
- Documenting hazard assessments;
- Providing PPE to employees;
- Training employees to use PPE;
- Retraining employees if necessary;
- Documenting training; and,
- Requiring employees to use PPE when necessary.

Employees are responsible for the following:

- Identifying hazards requiring PPE;
- Contacting their supervisor for guidance when hazards or hazard controls (including PPE) are unknown or require clarification;
- Maintaining PPE in good and safe condition;

- Requesting new PPE when required;
- Participating in hazard control and PPE training; and
- Using PPE as required, employees failing to use PPE as required may be subject to disciplinary action.

E. Hazard Assessments

To evaluate work areas and practices, a walk-through survey must be conducted. The walk-through survey identifies hazards that employees are potentially exposed to during while working. The walk-through survey is performed by supervisors responsible for the working conditions and practices in their areas. Supervisors conducting hazard assessments should observe work practices and obtain information from affected employees.

During the walk-through survey, supervisors should evaluate tools, equipment, facilities and work practices for the following general hazards:

- **Impact/Penetration and Compression Hazards:** Sources of motion (e.g., movement of tools, machine components or particles) and sources of rolling and potential falling objects must be evaluated.
- **Chemical Hazards:** Chemical exposures to the eyes and skin as well as inhalation hazards must be assessed.
- **Noise Hazards:** Loud tools and equipment should be evaluated by EH&S.
- **Respirable Hazards:** Processes creating dusts, mists, fumes and vapors should be evaluated by EH&S.
- **Electrical Shock Hazards:** Equipment using electricity must be assessed.
- **Light Radiation Hazards:** Welding, brazing, torch cutting, furnaces and lasers must be assessed.
- **Heat/Cold Hazards:** Sources of high and low temperatures must be assessed as well as employee exposure to hot or cold work environments.

A hazard re-assessment must be conducted whenever new equipment or processes are introduced, or the review of an incident report, occupational injury and/or illness records by the supervisor or EH&S indicates the potential need for additional PPE. A hazard re-assessment may also support eliminating the need for PPE based upon hazard elimination (e.g. product substitution) or the implementation of engineering or administrative controls.

Identified hazards should be eliminated or controlled using engineering and administrative controls when technologically and economically feasible. However, when engineering and administrative controls are not feasible, timely, or do not completely eliminate the hazard, PPE must be used. Contact EH&S (335-3041) for assistance in identifying and evaluating potential engineering and/or administrative controls.

The following “Workplace Hazard Assessment and Personal Protective Equipment Selection Tables” have been developed to assist supervisors in assessing their work areas. Though all work places are to be evaluated, hazards requiring the use of PPE will generally not be found in office type work areas.

**WORKPLACE HAZARD ASSESSMENT
AND PERSONAL PROTECTIVE EQUIPMENT TABLES**

EYE AND FACE PROTECTION

Eye and face protective equipment should be routinely considered for employees using, handling, sorting, bulking or working in the vicinity of others using chemicals, employees collecting building material samples via semi-destructive methods, employees entering shop, construction or renovation areas and laboratory inspectors.

General eye and face protective equipment selection criteria:

- All eye and face protective equipment shall comply with ANSI Z87.1-1989, 1998 or 2003, except eye protection designed for laser operations. Laser protective eyewear optical density is dependent on laser wavelength (Contact EH&S' Occupational Health and Safety unit for further information).
- Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest reasonably anticipated level of each hazards must be required.
- As a general rule, face-shields, when required should be worn over primary eye protection (spectacles or goggles).
- Contact lenses wearers must also consider additional eye and face protection devices in a hazardous environment. Dusty and/or chemical environments may represent an additional hazard to contact lens wearers.
- Operations involving heat may also produce light radiation. Protection from both hazards is required.
- Protection from light radiation is directly related to spectacle filter density. Select the darkest shade that allows task performance.

EYE AND FACE PROTECTION SELECTION TABLE

<i>SOURCE/ACTIVITY</i>	<i>HAZARD</i>	<i>PROTECTION</i>
IMPACT: Demolition, abrasive blasting, grinding, machining, masonry work, woodworking, sawing, drilling, powered fastening, riveting and sanding.	Flying fragments, objects, chips and sand particles.	Spectacles with side protection, goggles, and/or face shields.

SOURCE/ACTIVITY	HAZARD	PROTECTION
HEAT: Welding, torch cutting, furnace operations, pouring and casting.	Hot sparks. Splash from molten metals. High temperature exposure.	Goggles, spectacles with side protection. For severe exposure use face-shields. Face-shields worn over goggles. Screen face-shields, reflective face-shields.
Cold: Using, pouring or transferring liquid nitrogen or helium.	Splash from liquid gas. Low temperature exposure.	Face-shields worn over goggles. Screen face-shields.
DUST: Woodworking, buffing, cleaning with compressed air and grain and coal handling.	Dust.	Goggles.

SOURCE/ACTIVITY	HAZARD	PROTECTION
<p>LIGHT and/or RADIATION:</p> <p>Welding - Electric Arc</p> <p>Welding - Gas</p> <p>Cutting, Torch Brazing, Torch Soldering</p> <p>Lasers</p>	<p>Optical Radiation</p> <p>Optical Radiation</p> <p>Optical Radiation</p> <p>Thermal exposure, acoustic, photochemical</p>	<p>Welding helmets or shields. Typical shades: 10-14.</p> <p>Welding goggles or face-shields. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4.</p> <p>Spectacles or welding face-shield. Typical shades: 1.5-3.</p> <p>Protective eyewear with an optical density for the specific application. Refer to the laser manufacturer's operations manual or ANSI Z136.1 (most current edition).</p>
<p>CHEMICALS:</p> <p>Laboratory research, chemical handling and transferring, custodial, construction and maintenance operations</p>	<p>Splash</p> <p>Vapor and Gas Exposures</p>	<p>Goggles, eyecups, face-shields. See Material Safety Data Sheet for appropriate eye and face protection.</p> <p>Goggles must be non-ventilated. See Material Safety Data Sheet for appropriate eye and face protection.</p>

FOOT PROTECTION

Foot protective equipment should be routinely considered for employees using, handling, sorting, bulking or working in the vicinity of others using chemicals, employees collecting building material

samples via semi-destructive methods, employees entering shop, construction or renovation areas, employees collecting environmental samples outdoors on uneven terrain, employees lifting or manipulating heavy objects or working with heavy equipment and laboratory inspectors.

FOOT PROTECTION SELECTION TABLE

SOURCE/ACTIVITY	HAZARD	PROTECTION
IMPACT: Routinely carrying or handling materials such as packages, parts, or heavy tools.	Falling objects. As a general guide, routinely lifting hard edge objects, weighing 10 pounds or more, at waist level should be considered a hazard.	Safety shoes or boots complying with ASTM FR-2412-(most current edition) or ANSI Z41-1991 & (most current edition).
COMPRESSION: Manual and powered material handling equipment, bulk rolls and heavy tools.	Rolling or pinching equipment and objects.	Safety shoes or boots complying with ASTM FR-2412-(most current edition) or ANSI Z41-1991 & (most current edition).
PUNCTURE: Construction and demolition activities.	Stepping on nails, tacks, screws, large staples, scrap metal or broken glass.	Safety shoes or boots with puncture resistant soles.
ELECTRICAL: Construction and maintenance of electrical equipment/service.	Electrical shock and electrocution.	Electrical insulating safety shoes.

SOURCE/ACTIVITY	HAZARD	PROTECTION
CHEMICAL: Laboratory research, chemical handling and transferring, custodial, construction and maintenance operations.	Splash - skin burns and absorption toxicity.	Impervious rubber boot or bootie covering the shoe. Pant leg or lab coat should pass over top of boot/shoe to prevent chemical from entering.

HEAD PROTECTION

Head protective equipment should be routinely considered employees entering shop, construction or renovation areas or working with heavy equipment.

Head protective equipment selection criteria:

- Protective helmets shall comply with ANSI Z89.1-(most current edition).
- Proper fitting of helmets is important to ensure it will not fall off. In some cases a chin-strap may be necessary.

HEAD PROTECTION SELECTION TABLE

SOURCE/ACTIVITY	HAZARD	PROTECTION
IMPACT/PENETRATION : Construction, repair, demolition and tree trimming.	Overhead hazards, falling objects.	Type I Protective Helmets (Top protection). Type II Protective Helmets (Lateral impact protection)

SOURCE/ACTIVITY	HAZARD	PROTECTION
ELECTRICAL: Electrical utility installation and repair.	Electrical shock and electrocution.	Class E (electrical), tested to withstand 20,000 volts; Class G (general), tested at 2200 volts; and Class C (conductive), provides no electrical protection.
ENTANGLEMENT: Rotating machinery.	Hair becoming entangled in moving parts.	Caps or other protective hair coverings.

HAND PROTECTION

Gloves are often relied upon to prevent cuts, abrasions, burns and skin contact with chemicals that are capable of causing local or systemic effects following dermal exposure. There is not a single glove that provides protection against all potential hand hazards. Therefore, it is important to select the most appropriate glove for a particular application, and to determine how often and long it can be worn and whether it can be reused. In some cases, particularly those relating to chemical exposure, double glove use (inner and outer glove) may be required.

Physical and chemical hand protective equipment selection criteria:

- Work activities should be evaluated to determine the degree of dexterity required, the duration, frequency, and degree of exposure, and the physical stresses that will be applied.
- The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects.
- For mixtures and formulated products (unless specific test data are available), gloves should be selected on the basis of the chemical component that will breakthrough the glove material in the shortest time.

Electrical hand protective equipment selection criteria and testing:

- Rubber insulating gloves should meet the American Society for Testing and Materials (ASTM D 120-87), Specification for Rubber Insulating Gloves.

- Electrical protective equipment, including gloves, shall be subject to periodic electrical tests. Rubber gloves are to be tested before first use and every 6 months thereafter.

HAND PROTECTION SELECTION TABLE

SOURCE/ACTIVITY	HAZARD	PROTECTION
SHARP TOOLS/MATERIALS: Cutting, dissecting, dicing, butchering, handling sharp or ragged objects.	Lacerations from blades, knives, glass, sheet metal. Splinters from rough lumber. Severe abrasions.	Leather, Kevlar®, wire mesh or stitch gloves, cut-resistant rubber gloves.
THERMAL HEAT: Cooking, welding, soldering, brazing, foundry work, steam line/furnace repair, autoclaves.	Thermal Heat/Burns.	Leather, Kevlar®, flame-retardant gauntlet gloves, chemical treated cloth gloves.
EXTREME COLD: Handling cold materials, cryogenic research.	Frostbite.	Permeable or impervious non-insulated gloves, permeable or impervious insulated gloves.
ELECTRICAL: Electrical utility installation and repair.	Electrical shock and electrocution.	Rubber insulated voltage rated gloves, other gloves rated for electrical work.

SOURCE/ACTIVITY	HAZARD	PROTECTION
<p>CHEMICAL: Laboratory research, chemical handling and transferring, custodial, construction and Maintenance operations.</p>	<p>Glove permeation and degradation causing dry skin, dermatitis, burns, irritation or ulceration, systemic effects</p>	<p>Gloves composed of chemically resistant material. Refer to the Safety Data Sheet and the WSU Laboratory Safety Manual. Contact EH&S for assistance.</p>

HEARING PROTECTION

Hearing protective equipment should be routinely considered for employees working in loud or noisy environments. As a general rule, if you must raise your voice to speak to an individual standing 3 feet away from you, hearing protection is required.

Employees exposed to noise at 85 dBA and higher based on an 8-hour time weighted average are to be included in WSU’s hearing conservation program. The program includes noise monitoring, the use of appropriate hearing protection, annual audiometric testing, and annual training.

Contact EH&S’ OHS unit to arrange a noise hazard assessment.

HEARING PROTECTION SELECTION TABLE

SOURCE/ACTIVITY	HAZARD	PROTECTION
<p>NOISY EQUIPMENT: High speed tools, heavy mobile equipment and frequent use of mechanized equipment.</p>	<p>Noise induced hearing loss.</p>	<p>Ear plugs, ear muffs with the appropriate Noise Reduction Rating (NRR)¹.</p>

1. Note: The NRR does not reflect the actual number of decibels (dBA) protection the hearing protection device provides. Instead, the hearing protection device provides NRR-7 protection, example: TWA=100 dBA, ear muff NRR=19 dB, estimated exposure=100-(19-7)=88 dBA.

RESPIRATORY PROTECTION

Respiratory protective equipment should be routinely considered for using, handling, sorting, bulking or working in the vicinity of others using chemicals, employees collecting building material samples via semi-destructive methods without a negative exposure assessment, employees entering construction or renovation areas where activities such as demolition, sanding and welding create dusts and fumes, and employees evaluating potential biohazards such as rodent or bird droppings.

Employees required to wear respirators are to be included in WSU’s respiratory protection program. The program includes hazard assessment, air monitoring, medical evaluation, fit testing, the use of appropriate respiratory protective equipment and annual training. Employees potentially exposed to specific contaminants (e.g., lead, asbestos, formaldehyde) are to be covered by an additional medical surveillance program.

Contact EH&S’ OHS unit to arrange a respiratory hazard assessment.

RESPIRATORY PROTECTIVE SELECTION TABLE

SOURCE/ACTIVITY	HAZARD	PROTECTION
Employees exposed to activities creating dusts, mist, fumes and vapors.	Oxygen deficient atmospheres, irritants, carcinogens, sensitizers and other health effects.	Supplied air respirators (SCBAs, air-line) and air-purifying respirators (half and full face) ¹ .

- Note: Different airborne contaminants require significantly different levels of respiratory protection based upon airborne contaminants and contaminant concentrations (e.g. compared to permissible exposure levels, immediately dangerous to life and health thresholds), respirator applied protection factors, contaminant specific regulations, respirator cartridge service life and other factors. Therefore, when seeking to protect employees from additional or newly identified airborne hazards, it is critical that EH&S’ OHS unit be consulted to assist in identifying the appropriate level of respiratory protection.

MISCELLANEOUS PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment not listed on the preceding charts may be required when employees are exposed to cold weather, laceration, burn, abrasion, chemical and fall hazards. Personal protective equipment to consider includes: Snow and ice cleats, chaps, aprons, lab coats, protective sleeves, knee pads, coveralls, safety vests, welding coats, and personal fall restraint and arrest systems.

The “Hazard Assessment and Personal Protective Equipment Selection Charts” only address the most frequently encountered hazards and recommended PPE. Therefore, the contents are not all inclusive. Hazards not listed may be found in your work area and special PPE could be needed. If you require assistance in conducting a hazard assessment or selecting PPE, contact EH&S’ OHS unit for additional information.

HAZARD ASSESSMENT CERTIFICATION

EH&S verifies that a hazard assessment has been performed through a written certification. After surveying work areas and practices, the supervisor completes the Workplace Hazard Assessment Certification Form provided in Appendix A. If a work area assessment does not reveal hazards requiring the use of PPE, enter “No Hazard” on the Workplace Hazard Assessment Certification form. These forms are retained by the department.

PERSONAL PROTECTIVE EQUIPMENT SELECTION

Upon completing the hazard assessment, each unit selects and provides the types of PPE suitable for the specific hazards present. The previous “Workplace Hazard Assessment and Personal Protective Equipment Selection Tables” were developed to assist supervisors in selecting appropriate PPE.

Careful consideration must be given to the level of protection, fit and comfort of the PPE. Personal protective equipment that fits poorly will not afford the necessary level of protection. Protective devices are generally available in a variety of sizes and care should be taken to ensure that the right size is selected. Some PPE is equipped with adjustable features. Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. However, PPE should never be modified without written approval from the manufacturer.

F. Training

Supervisors must ensure their employees receive information and training on how to use the assigned PPE. Personal protective equipment must always be used in accordance with the manufacturer’s specifications.

Training and information to be provided to each user of PPE includes:

- Why, when, and what PPE is necessary
- How to properly don, doff, adjust, and wear PPE
- The selection criteria and limitations of the PPE
- The proper care, inspection, maintenance, useful life and disposal of the PPE

Manufacturer’s literature, the supplying vendor, and EH&S’ OHS unit are sources for PPE selection and training assistance and materials. Employees using respirators and hearing protection are to be trained by EH&S.

Each employee must demonstrate an understanding of this training before being allowed to perform work requiring the use of PPE. Methods of demonstrating understanding include orally questioning the employee, observing the employee using the PPE in a real or artificial setting, or administering a written test.

Employees must be retrained when there have been: (1) Changes in the workplace, such as new processes and equipment (e.g. engineering controls), which render previous training obsolete; (2) Changes in the type(s) of PPE render the previous training obsolete; and (3)

Inadequacies in an employee's knowledge or use of assigned PPE indicate the employee has not retained the requisite understanding or skill.

TRAINING CERTIFICATION

A written certification must be completed verifying that each employee using PPE has received and understood the required training. After employees receive training, the supervisor completes the Personal Protective Equipment Training Certification form provided in Appendix B.

Appendix A: Hazard Assessment Certification Form

WORKPLACE HAZARD ASSESSMENT CERTIFICATION FORM

Instructions: Complete form using Personal Protective Equipment Hazard Assessment Guidelines. Completed form is to be retained for departmental records.

Person conducting the hazard assessment:

Date of hazard assessment:

Work Activity Assessed	Location of Assessment (Bldg/Rm)	Hazard(s) Identified	PPE Selected (Make & Model #)

I, _____, certify that the assessment of the identified work activities has been performed. **Date:**

Signature

Appendix B: PPE Training Certification Form

PERSONAL PROTECTIVE EQUIPMENT TRAINING CERTIFICATION

_____ has been assigned and trained to use the following personal protective equipment when working in areas and/or tasks identified below:
Employee's Name

_____ has been assigned and trained to use the following personal protective equipment when working in areas and/or tasks identified below:

Area/Task	PPE Required - ✓ Applicable Boxes	PPE Selected (Make & Model)
	<input type="checkbox"/> Eye/Face Protection <input type="checkbox"/> Head Protection <input type="checkbox"/> Foot Protection <input type="checkbox"/> Hand Protection <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Respiratory Protection <input type="checkbox"/> Other: _____	
Area/Task	PPE Required - ✓ Applicable Boxes	PPE Selected (Make & Model)
	<input type="checkbox"/> Eye/Face Protection <input type="checkbox"/> Head Protection <input type="checkbox"/> Foot Protection <input type="checkbox"/> Hand Protection <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Respiratory Protection <input type="checkbox"/> Other: _____	

I, _____
Employee's Signature

_____ have received and understood the training on the PPE listed above. This training included the areas, tasks and hazards requiring PPE; how to properly put on, wear and take off the PPE; PPE selection criteria, and the proper care, inspection, maintenance, useful life and disposal of the PPE.

Supervisor:

Date(s) of Training:

CHAPTER 25 SAFETY BULLETIN BOARDS

A. References

- a. WSU Safety Policy and Procedure Manual Section 2.14 - Safety Bulletin Boards
http://old-www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.14_Safety_Bulletin_Boards.htm
- b. [WAC 296-800-19005 Provide a safety bulletin board in your work place](#)

B. Purpose The Safety Bulletin Board provides a location for communicating safety topics and concerns to WSU EH&S employees.

C. Locations. Each University department or unit must install and maintain a safety bulletin board in an appropriate central location, such as a break room or near the main building entrance. The EH&S bulletin board is located in the corridor adjacent to room 81.

D. Responsibility. Department or Unit administrators in coordination with the safety committee or safety committee representative are responsible for ensuring the required materials are posted on the safety bulletin board.

E. Items for Safety Bulletin Boards:

Required

- a. Job Safety and Health Law (F416-081-909)
<http://www.lni.wa.gov/formpub/Detail.asp?DocID=1738>
- b. Your Rights as a Worker in Washington (F700-074-909)
<http://www.lni.wa.gov/FormPub/Detail.asp?DocID=1927>
- c. If a Job Injury Occurs/Workers Compensation (F242-191-909)
<http://www.lni.wa.gov/FormPub/Detail.asp?DocID=1612>
- d. The OSHA 300 Summary must be posted from February 1 to April 30 each year. The annual OSHA 300 summary may be obtained by contacting EH&S 335-3041.
- e. Labor and Industries (L&I) violations received by the department for the required (varies) posting interval.

Optional

Additional safety educational materials may also be posted on the bulletin board.

F. Maintenance

In order to maintain a professional appearance worn material should be replaced periodically. Dated material is to be removed. It is recommended that, at a minimum, materials be reviewed every 6 months.

Although some information is required to stay posted on your safety bulletin board, encourage employees to return periodically by adding new safety educational materials available free from LNI, such as posters or safety tips, and also update your safety bulletin board with the latest information.

G. Assistance

Contact the EHS Occupational Health and Safety unit at 335-3041 with questions concerning safety bulletin boards.

CHAPTER 26 SAFETY COMMITTEE

PURPOSE: Safety committees provide a venue for communicating and evaluating workplace safety and health concerns identified by employees. The EHS/RMS safety committee is intended to represent all EHS/RMS employees on the WSU Pullman campus. All non-management EHS/RMS employees may attend safety committee meetings, a management representative will be present to ensure employee concerns are raised to the management level.

REFERENCES AND RESOURCES:

WSU (SPPM) 2.12 Unit Safety Committees and Meetings

www.wsu.edu/manuals_forms/HTML/SPPM/2_General_Workplace_Safety/2.12_Unit_Safety_Committees_and_Meetings.htm

Washington Administrative Code Safety committees/safety meetings [WAC 296-800--130](http://www.wa.gov/WAC/296-800-130)

Washington State Department of Labor and Industry Safety Meetings and Committees

<http://www.lni.wa.gov/Safety/GettingStarted/DayToDaySafety/SafetyMeetings.asp>

SAFETY COMMITTEE STRUCTURE:

Membership

Non-management Representatives

- Employees elect fellow workers to represent them on the committee.
- Employees elect committee members to serve for a one year term. Members may be reelected by their peers. There is no limit on the number of terms to which employees may be reelected.
- Vacancies are filled by special election.

Management Representatives

- The unit administration appoints at least one management representative to the committee.
- The number of management members may not exceed the number of non-management employee members.

Representation by Area

Area	Number Reps	Expiration
Environmental Services	1	March 2019
Occupation Health and Safety	1	March 2019
Operations	1	March 2019
Risk Management	1	March 2019
Administration	1	Ex Officio
Committee Coordinator	1	Invited Guest

EHS/RM SAFETY COMMITTEE FUNCTIONS:

Safety meeting agendas must include the following activities:

- Review University Health and Safety (UH&S) Committee minutes.
- Assist unit supervisors in promoting or publicizing relevant safety and health topics (i.e. issues, policies, programs, training).
- Evaluate employee safety concerns, reported hazards, and suggestions, and proposing solutions.
- Assist unit supervisors in reviewing job procedures and recommending improvements.
- Evaluate Incident Reports and Supervisor's Accident Investigation Reports to determine causes/problems and recommending methods of prevention or solutions.
- Refer unresolved safety problems to the unit administrator.
- Evaluate the unit's Accident Prevention Program and other applicable safety and health programs (e.g., Chemical Hazard Communication Program, Laboratory Safety Manual) and making recommendations to the unit administrator on improvements.
- Assist unit supervisors in coordinating and conducting annual safety self-inspections.

Optional meeting activities:

- Meeting annually with the unit administrator and supervisors to select projects based on their activities, potential hazards, accident history, and WSU policy requirements.
- Reporting progress on safety projects during safety committee meetings.

DOCUMENTATION

Minutes

- The group appoints or elects a representative to document safety meetings.
- The Safety Committee must document the minutes of meetings. The Committee may use the Safety Meeting Report and Agenda form on SPPM 2.12.4-5 or may create a report to document meetings.

Routing

- The Safety Committees must route the safety meeting report to unit administrators

or supervisors for signature.

- The Safety Committee will submit signed meeting reports to the unit by direct distribution to employees or by posting copies on safety bulletin board.

Retention

The Safety committee will maintain copies of the safety meeting reports on file for at least two years, in accordance with University records retention requirements. (See BPPM 90.01.)

CHAPTER 27 (SUPPORTED) SCAFFOLD EQUIPMENT

A. References:

1. [SPPM S3.34 Elevated Work Safety](#)
2. [Scaffolds, Chapter WAC 269-874](#)

B. Purpose and Scope:

This chapter establishes supported scaffolding erection and use requirements for Environmental Health and Safety (EH&S) employees referencing the WSU policy and State code/rule identified above. Suspended scaffolds are excluded from this chapter's scope.

C. Responsibilities

Supervisors are responsible for the following:

- Designating a competent person;
- Ensuring scaffolds are designed by a qualified person;
- Ensuring the designated competent person and employees working on, erecting, dismantling and/or maintaining scaffolds receive training; and,
- Disciplining employees not conforming to this chapter's requirements.

The Competent Person is responsible for:

- Ensuring scaffolds are erected and dismantled per the manufacturers or qualified person's guidance;
- Training employees using, erecting, dismantling and/or maintaining scaffolds;
- Inspecting the scaffold at the beginning of each work shift;
- Taking corrective action when unsafe conditions are identified; and,
- Adhering to WAC 296-874 and SPPM S 3.34.

Note: No certification or degree is required to qualify as the scaffolding competent person. The designation is based upon knowledge and the authority to take prompt action to eliminate hazards

Employees are responsible for:

- Erecting and dismantling scaffolds per the Competent Person's instruction;
- Attending scaffolding training; and,
- Identifying scaffolding hazards to the Competent Person and/or Supervisor.

D. Training:

User/Erector

The following training is required for scaffolding users/erectors/dismantlers:

- Electrical hazards;
- Fall hazards;
- Falling object hazards;
- How to erect, maintain, and disassemble the fall protection and falling object protection systems being used;
- How to use the scaffold;
- How to handle materials on the scaffold;
- The load-carrying capacity and maximum intended load of the scaffold; and,
- Any additional requirements that apply.

Retraining is required under the following conditions:

- Based upon observation, employees lack the skill or understanding to safely erect, use, or dismantle a scaffold;
- A change in the type of worksite, scaffolding, fall protection, falling object potential or other equipment used.

E. Assembly and Disassembly

The scaffolding competent person must be on-site to supervise scaffolding assembly and dismantling. Scaffolds shall be assembled per manufacturers or qualified person's guidelines and WAC 296-874.

F. Scaffold Inspections

Inspections shall be performed by the Competent Person prior to assembly to inspect for missing or damaged parts, before each work shift and after any event affecting the scaffold's integrity e.g. windstorm, struck by object etc. A daily inspection log must be maintained by the competent person when work is performed.

The following scaffolding components shall be inspected:

1. Guardrails, toe boards, and planking are in place and secure;
2. Locking pins are in place at each joint; and,
3. All wheels on moveable scaffolds are locked.

G. General Requirements for Scaffolding

1. Scaffolds shall be assembled with the following:

- All required bracing;
- Standard guardrails and toe boards;

- Full decking; and,
 - Safe access.
2. Do not attempt to gain access to a scaffold by climbing on it (unless it is specifically designed for climbing – always use a ladder).
 3. Scaffolds and their components must be capable of supporting four times the maximum intended load.
 4. Any scaffold or scaffold accessories such as braces, brackets, trusses, screw legs, ladders, etc., damaged or weakened in any way, must be immediately repaired or replaced.
 5. Scaffold planks must extend over their end supports not less than 6 inches nor more than 12 inches, unless otherwise specifically required.
 6. Scaffold platforms must be at least 18 inches wide unless otherwise specifically required or exempted.
 7. Where persons are required to work or pass under the scaffold, scaffolds shall be provided with a screen between the toe board and guardrail, extending along the entire opening. The screen must be made of No. 18 gauge U.S. Standard wire, ½ inch mesh or equivalent protection.
 8. All scaffolds must be erected level and plumb, and on a solid footing.
 9. Do not change or remove scaffold members unless authorized.
 10. Do not allow workers to ride on a rolling scaffold when it is moved. Remove all materials and tools on deck before moving.
 11. Do not alter any scaffold member by welding, burning, and cutting, drilling, or bending.

Assistance

Contact the EHS OHS Assistant Director for assistance; telephone 335-5251.

The above are general requirements for erecting, dismantling and working from supported scaffolds. For all requirements of the type of scaffold to be used, refer to [Scaffolds, Chapter 296-874 WAC](#).

CHAPTER 28 SPILL RESPONSE

A. References

1. [WAC 296-843 Hazardous Waste Operations](#)
2. [WAC 296-901 Hazard Communication](#)
3. [WAC 173-303 Dangerous Waste](#)

B. Appendices

Appendix A: Emergency Response Procedures

C. Scope

This chapter establishes chemical spill response requirements for Environmental Health and Safety (EHS) employees. WSU EHS responds to hazardous chemical spills on the WSU Pullman campus, and collects and provides spill and hazard information to first responders (WSU Police and Pullman Fire). EHS spill response personnel assist with identifying and coordinating necessary evacuation efforts, establish exclusion zones, evaluate spill hazards using monitoring equipment and/or observations and calculations, perform spill cleanup and other necessary functions promoting protection of human health and the environment.

D. Responsibilities

Supervisors:

- The EHS Environmental Services Assistant Director reviews and approves this plan and associated appendices annually.
- The EHS Environmental Services Assistant Director reviews, updates and approves the Contingency Plan.
- The EHS Environmental Services Assistant Director contacts or designates a responsible individual to engage the Critical Emergency Operations Team (CEOT) when warranted.
- Arranges and requires Hazardous Waste Operations and Emergency Response (HAZWOPER) 29 CFR 1910.120 training for all EHS employees engaged in emergency chemical spill response and supervised field training/experience (see also this chapter's training section).
- Ensures spill response employees are familiar with this plan.
- Requires spill response personnel maintain current medical approval and respirator training and fit tests.
- Coordinates, provides guidance and/or support for airborne contaminant monitoring to evaluate personnel exposure and personal protective equipment selection.
- Arranges and requires annual medical surveillance (or more frequently as required).
- Assigns personnel to maintain emergency response equipment and stock

materials.

- Personal protective equipment requirements are communicated to employees in accordance with this APP's Personal Protective Equipment (PPE) Chapter.
- Provides oversight or assigns a designee to oversee cleanup activities.
- Evaluates spill response location after cleanup and approves or provides criteria to approve the area for reoccupation by non-spill response trained personnel.
- Coordinates after action/spill cleanup review/debriefing.
- Prepares and provides incident summary to affected personnel and departments.
- Coordinates all communication to regulatory agencies.

Employees:

- Immediately inform their supervisor when hazards outside the scope of the employees training, ability or understanding are encountered.
- Immediately inform their supervisor when cleanup location hazards are inconsistent with, or exceed those assigned/described.
- Attend HAZWOPER (29 CFR 1910.120) training and actively participate in supervised field training and tabletop discussions.
- Familiarize themselves with this plan, personnel not adhering to the contents of this plan may be subject to disciplinary action.
- Maintain current medical approval and respirator training and fit tests.
- Wear personal monitoring equipment.
- Participate in annual medical surveillance (or more frequently as required).
- Maintain emergency response equipment and stock materials.
- Attend PPE training and maintain PPE. Based upon knowledge and training, employees are expected to be capable of identifying the appropriate PPE for a spill response.
- Cleanup spills safely.
- Request an evaluation of the spill response location after cleanup or evaluate location after cleanup per supervisor's direction.
- Participate in after action/spill cleanup review/debriefing.

E. Training

EH&S spill response employees receive the following training referencing [WAC 296-843-200](#):

- The contents of this APP Chapter;
- A minimum 24 hours HAZWOPER (29 CFR 1910.120) training with 16 hours simulated/situational training and an additional 2 days supervised field experience with 8 hour annual HAZWOPER refreshers thereafter;
- Personnel required to wear self-contained breathing apparatus (SCBA)

respirators receive the minimum training identified above, and an additional 40 hours of training emphasizing the use of SCBA and chemical protective clothing (Level B PPE) *Note: EHS personnel do not perform spill response requiring Level A PPE;*

- Engineering and administrative controls (exclusion zone monitoring and entry strategies including the use of existing laboratory hazardous exhaust systems) that may reduce or preclude the need for PPE;
- Available sources of chemical hazard information, including SDS (see also this APP's Hazard Communication chapter), the NIOSH pocket guide and WSU specific information sources (e.g. laboratory signage or departmental chemical inventories) to assist in identifying potential spill hazards;
- Training documentation is provided to the EHS OHS AD and,
- Re-training will be required when:
 - There have been changes in the workplace, such as new processes and equipment, which render previous training obsolete;
 - Changes in the types of equipment that render the previous training obsolete;
 - When an employee exhibits inadequate knowledge, skill and understanding or non-conforming use of the equipment; and/or
 - When regulatory requirements change.

F. Procedures

EHS personnel respond to the varying chemical spills and releases encountered at large research and educational institutions. The EHS Departmental Response Plan located in room B19 contains procedures for different spill/release responses based upon the chemical(s) and associated hazards. The responders may take the binder with them to the release location for reference.

At minimum, 2 EHS employees will respond to a spill requiring 15 minutes or more to cleanup. Release responses involving biological or radioactive contamination must be coordinated with the Office of Research Assurances (ORA). EHS chemical spill/release response procedures are detailed in Appendix A, EHS Emergency Response Procedures.

Appendix A

EHS Emergency Response Procedures

Environmental, Health, Safety (EHS) Emergency Response Procedures

This procedure is activated when someone contacts WHITCOM (911) or WSU Facilities Service Dispatch (509-335-9000) about a Washington State University (WSU) hazardous material release or accident. If

WHITCOM is contacted they deploy appropriate emergency response personnel (Pullman Fire Department, Emergency Medical Team, etc.) and contact WSU Facilities Services Dispatcher (509-335-9000) or EHSRMS directly. If WSU Facilities Services Dispatcher is contacted they should refer to WHITCOM, if appropriate, or follow steps below.

Calls During Normal Business Hours

1. Facilities Services dispatcher or EHSRMS receptionist writes down the information provided by WHITCOM on the top of the Emergency Response Phone Numbers Document (ERPND) which includes materials involved, quantity of material, incident location (building, room number, etc.), contact name, contact phone number, contact meeting location, and if radioactive material, biohazard material, or the Nuclear Radiation Center are part of the incident. If Facilities Services dispatcher is contacted they will forward information to EHSRMS.
2. EHSRMS reception provides information to appropriate department personnel and if possible forwards call to the same individual. EHSRMS responder will identify another appropriate staff member to assist with response and notify the EHSRMS Executive Director or backup.

Calls After Business Hours

1. Facilities Services dispatcher writes down the information provided by WHITCOM on the top of the Emergency Response Phone Numbers Document (ERPND) which includes materials involved, quantity of material, incident location (building, room number, etc.), contact name, contact phone number, contact meeting location, and if radioactive material, biohazard material, or the Nuclear Radiation Center are part of the incident.
2. Facilities Services determines the appropriate call list based on the emergency. Dispatcher contacts appropriate responder using the afterhours call back list on the ERPND by starting at the top and working down the list until someone is contacted. The dispatcher gives the information provided by WHITCOM to responder contacted. Responder provides the dispatcher with an estimated time of arrival.

Responder Procedures

1. EHSRMS responders will gather the appropriate response equipment, personal protective equipment (PPE), and if material is known at least a Material Safety Data Sheet or Safety Data Sheet.
 - a. PPE and spill cleanup materials can be found at:
 - i. EHS Building has two Emergency Response bags in room B19 accessed with key N959.

- ii. Chemical Stores warehouse has extra supplies which is accessed using key W688. Key is located in the key box beside the mailboxes.
 - lii. If applicable, use an Environmental Services truck to respond. The trucks contain PPE and cleanup supplies. The keys for the trucks are located in the key box beside the mailboxes.
 - iv. If respiratory protection is needed and you do not have a personally issued respirator the departmental respirators and cartridges are also located in B19. The SCBAs are located in the Chemical Stores warehouse accessed using key W688. Key is located in the key box beside the mailboxes.
 - v. If specific PPE or cleanup material is needed for the chemical involved, gather items prior to going to scene
- b. Take digital camera located in the cabinet of room 61 in the EHS Building accessed using key N959. Pictures should be used to aid in writing up the investigation or notifying the appropriate agencies if necessary.
 - c. EHS Departmental Response Plan located in room B19 contains procedures for different types of responses. If applicable, the responder should take binder with them to the incident.
2. Responders should go to contact meeting location. Once the contact is found responder should verify the information provided by the dispatcher is accurate and find out current status of the incident. Determine if it is necessary to extend exclusion and/or evacuation zone, get additional security, or send out a WSU Alert. If any of the conditions below are met the Critical Emergency Operations Team (CEOT) should be contacted using the call list below:

Immediate threat: Any developing or anticipated situation which poses an immediate (or continuing) threat to WSU Pullman Campus.

Leadership and or Alert Notification: Fatality or significant disruption of academic, research, or utility/operation. Any developing or anticipated situation which will require activation of the Alert Notification System, the COWS system, posting on the Alert website, or messaging using e-mail list serves.

Significant Event: Any developing or anticipated situation that, because of severity, duration, scope, or impact will involve resources beyond ordinary daily operations or mutual aid.

Press Attention or Social Media Component: Any developing or anticipated event which generates interest or coverage sufficient to warrant a response from WSU to limit disinformation, reduce public concern, or provide mitigating information to the public.

Policy Input: Any developing or anticipated event which will likely require the engagement of or policy input from senior WSU leadership.

BUSINESS HOURS	
Office of Emergency Management	509-335-7471

AFTER HOURS	
Office of Emergency Management on-call staff	509-335-7471

BUSINESS HOURS		AFTER HOURS	
Bill Gardner	509-335-8548	Bill Gardner - cell	509-432-1370
Steve Hansen	509-335-4212	Steve Hansen - cell	509-432-9852
Mike Larsen	509-335-4625	Mike Larsen - cell	509-432-9350
Mike Gaffney - office	509-335-4611	Mike Gaffney - cell	509-338-0318
Sarah Kubishta - office	509-335-7471	Sarah Kubishta - cell	
Julie Lusby - office	509-335-4796	Julie Lusby - cell	208-596-6843
WHITCOM-non emergency	509-332-2521	WHITCOM-non emergency	509-332-2521
Whitman Co. Health Department	509-397-6280	Whitman Co. Health Department	911
Travis Frost (USDA)	509-335-3238	Travis Frost (USDA)	208-413-0649
H2O Environmental	208-343-7867	H2O Environmental	208-343-7867

3. Visually view scene for laboratory signage or additional contact information.
4. If appropriate contact Building Coordinator to gather more information or send out building wide message. A list of Building Coordinators is maintained by Facilities Services dispatch or at <https://myfacilities.wsu.edu/main.aspx>.
5. Based upon the information it might be necessary to have additional responders. It is up to the responders to determine if more responders are needed and contact them using the ERPND or EHSRMS receptionist. All spills involving a chemical release should have at least two EHSRMS employees. If radioactive material, biohazard material or the Nuclear Radiation Center is involved in the incident someone on those call lists must be notified, and input should be provided before mitigation (step 7) begins. For all spills involving a chemical release at least two EHSRMS employees should be used.
6. After information has been verified, a determination about use of WSU Alert has been made, and the appropriate type and number of responders are on their way or on scene the responder should:
 - a. If there is an Incident Commander (IC): Inform IC that the responders will be entering the scene to determine extent of incident. Once the scene has been evaluated meet with IC and explain what steps will be taken to mitigate the release and clear the area to allow for re-occupancy.
 - i. It may be determined that the Incident Command can be transferred to the responder. If so, the IC will turn the scene over to EHSRMS responder and depart.

- ii. If the spill is beyond WSU's capabilities notify the Executive Director of Environmental, Health, Safety and Risk Management Services about using outside contractors. IC will remain until emergency response has been completed, site is secure, and only mitigation remains.
 - b. If there is not an Incident Commander (IC): responders enter the scene to determine extent of incident and after evaluating decide what steps should be taken to mitigate the release and clear the area to allow for re-occupancy. If hazards are found outside of responder's scope of expertise contact the appropriate personnel.
7. Complete mitigation using appropriate PPE, spill equipment, and monitors following EHSRMS procedures. The procedure may vary depending on the type of response.
8. Appropriate monitoring, if applicable, will be completed to ensure area is free of contamination.
9. After mitigation is completed the responder must notify Facilities Services dispatcher and OEM if WSU Alert has been issued that area is clear for re-occupancy. If multiple responders were required (chemical, biohazard, asbestos, radioactive material) each individual is responsible for notifying dispatcher that area is cleared.
10. After area has been cleared for re-occupancy all equipment should be cleaned and put in its correct location. Any supplies used during the response should be replaced.
11. Write a summary of the incident including pictures, mitigation details, any injuries, and steps taken to prevent the incident from happening again.
12. Responders should meet at a later date to evaluate response.
13. Share findings with appropriate personnel and departments.

Special Notes and Clarifications:

Radiation Safety Office (RSO)

- Outside of the Nuclear Reactor, the amounts and/or concentrations of radioactive material on campus are at levels that spills are cleaned up by the laboratory personnel. RSO will verify cleanup and decontamination has been completed via testing.
- If personnel are injured and contaminated with radioactive material RSO will assist to ensure that non disposable equipment and buildings (i.e. ambulance, hospital) are decontaminated. The spilled materials are to be cleaned up by laboratory personnel.
- In the event of a mixed waste (radioactive material and chemicals) RSO will not be part of the response team. RSO will provide guidance on the hazards associated with the radioactive material, provide guidance about monitoring equipment, provide any necessary training on use of monitoring equipment, provide readings where the radioactive material becomes a hazard and cleanup should be aborted, and suggestions on how to safely mitigate the release. Once the emergency is over and the chemical hazard has been eliminated, RSO will

verify cleanup and decontamination has been completed via testing. If not, lab personnel will decontaminate area

- In the event a spill occurs that is beyond the capabilities of the lab personnel (based on volumes the NRC is the only location), Washington State Department of Health has a list of approved contractors that can clean up the spill. There is no WSU contract in place.

Biological Safety (Office of Research Assurance)

- The amounts and/or concentrations of biohazardous material on campus are at levels that spills are cleaned up by the laboratory personnel. The Biosafety Office will verify cleanup and decontamination.
- If personnel are injured and contaminated with biohazard material the Office of Research Assurances will assist to ensure that non disposable equipment and buildings (i.e. ambulance, hospital) are decontaminated. The spilled materials are to be cleaned up by laboratory personnel.
- In the event of a mixed waste (biohazard material and chemicals), the Biosafety Officer will not be part of the response team. BSO will provide guidance on the hazards associated with the biohazard material and how material can be deactivated. Once the emergency is over and the chemical hazard has been eliminated, they will verify cleanup and decontamination has been completed. If not, lab personnel will decontaminate area
- In the event a spill occurs that is beyond the capabilities of the lab personnel, WSU has contracts with EnV Services and Bioquell to clean up the spill.

CHAPTER 29 SAFETY AND HEALTH TRAINING

A. References.

1. [SPPM 20.31 Safety Training](#)
2. [SPPM 20.30 Safety Orientation](#)
3. [SPPM 3.10 General Requirement for PPE](#)
4. APP Chapter 24 Personal Protective Equipment Hazard Assessment and Certification Guidelines used to support hazard assessments in non-laboratory workplaces
5. APP Chapter 24 Workplace Hazard Assessment Certification Form

B. Purpose and Scope.

This Chapter establishes responsibilities and training requirements for EHS employees where training is identified as an administrative control to reduce workplace hazards or is required by State rule.

C. Responsibilities

Supervisors are responsible for the following:

- Understanding the contents of this chapter;
- Ensuring employees receive New Employee Safety Orientation training including access and time to review this APP;
- Identifying employee work activities requiring training as outlined in this APP;
- Identifying training resources and permitting time during the work shift for employee training, initially with refresher training as required;
- Ensuring employee training is documented and training records are maintained; and,
- Evaluating employee performance and arranging for retraining when necessary.

Employees are responsible for the following:

- Understanding the contents of this chapter;
- Participating in New Employee Safety Orientation training and familiarizing themselves with this APP;
- Understanding what work activities require training prior to engaging in those work activities;
- Participating in training as required;
- Demonstrating proficiency and an understanding of the safety principles learned; and,
- Requesting additional training whenever concern arises over the adequacy of their existing training relating to specific work activities.

D. Requirements

Employee job classifications and their assigned duties aid Supervisors in determining an employee's required safety training. Supervisors must be familiar with the employee training requirements established in this APP and participate in *Supervisor as Safety Manager* training as necessary. EHS' Occupational Health and Safety (OHS) unit provides the *Supervisor as Safety Manager* training semi-annually.

E. New Hire Orientation

Every new WSU employee will be provided a safety orientation referencing the requirements established in [SPPM 2.16 Safety Orientation](#). A Safety Orientation Checklist must be completed (see the PDF version of [2.16.2](#)) and recorded in the employee training record.

Rehires or cyclical workers with less than six (6) months duration away from work, need not be considered new hires except at the start of their initial cycle.

Each employee must be briefed on the contents of this document and may be instructed to read selected safety materials, attend classroom based training, and/or complete on-line training directly pertaining to assigned duties. *Before new employees are released to perform work without the direct supervision of a properly trained supervisor or co-worker, they must satisfactorily complete the required safety training.*

Initial safety training must include an overview of this APP with specific instructions and time allotted for employees to read this APP and understand their responsibilities. Employees shall be instructed not to engage in the following activities or work with the following materials without receiving additional work activity or specific material handling training (Note: The following list is provided for guidance and may not be all inclusive):

- Chemical Handling
- Respirator Use (non-voluntary)
- Confined Space Entry
- Work above 10 feet
- Ladder Use
- Work from Scaffolds
- Operate Lifts
- Operate Powered Tools
- Trench/Excavation Work
- Work with Hazardous Energy/LOTO
- Hot Work (Weld/Cut)
- Work with Blood Borne Pathogens/OPIM
- Electrical Work
- Asbestos Work
- Lead Based Paint
- Compressed Gas
- Dangerous Waste Handling
- Spill Response
- Signaling/Flagging
- Laboratory Work
- Work around Lasers
- Work around Radio Transmitters
- Pesticide Handling

New employees shall also understand:

1. They are to report any unsafe conditions or practices immediately to their supervisor;
2. They have authority to stop work if any unsafe conditions or practices are present until such time as they are controlled;
3. Nothing we do is so important as to necessitate the violation of standing safety practices; and
4. Failure to comply with safety policies and procedures will be considered serious and result in timely corrective or disciplinary action judged to be appropriate for the specific circumstances at hand.

F. Specific Training Topics

Employees shall receive training as specified in Washington Administrative Code (WAC) and/or the WSU Safety Policy and Procedures Manual (SPPM) and this APP. Contact the EHS OHS unit for specific information.

G. Training Resources

Supervisors and trainers may obtain training aids from the following sources:

- The EHS home page <http://ehs.wsu.edu/> has training courses, DVDs, videos, fact sheets on numerous safety topics directly from the Environmental Health and Safety Department. If you don't see information on a topic call EHS and we will help get you the training you need.
- Posters and audio-visual safety training s from the State of Washington Division of Occupational Safety and Health (DOSH) <http://www.lni.wa.gov/safety/>
- Audio-visual materials from Academic Media Services. See BPPM [80.13](#).
- Direct purchase from non-WSU vendors. Contact Public Safety or Environmental Health and Safety for assistance.

H. Recordkeeping.

1. Supervisors should obtain a copy of the training form/sign-in-sheet used by the training provider. Supervisors provide training documentation to the EHS receptionist for incorporation into the EHS industry Safe database.
2. Training dates, class titles and employee names will be recorded when an employee participates in a training event. The sign-in sheet for training must include a description of the class content. Employees are to personally sign in for each training event.
3. For training requiring an evaluation or test, a copy of the employee's evaluation or test results will be placed in the employee's training records. Employees who fail to satisfactorily complete the evaluation or test will require retraining. Repeated failure to satisfactorily complete the evaluation or test may be addressed as a performance issue and handled accordingly.
4. Training records will be retained after the employee's separation from employment referencing [BPPM 90.1, University Records--Retention and Disposition](#).

CHAPTER 30 TRENCHING AND EXCAVATION SAFETY

A. REFERENCES:

- [SPPM 3.46 Trench and Excavation Safety](#)
- [WAC 296-155 part N](#)

B. APPENDICES:

- a. Appendix A: Trenching and Excavation Checklist

C. SCOPE and PURPOSE:

The following procedures apply to EHS employees working in or around excavations or trenches. Although EHS is not directly involved in excavation or trenching activities, EHS employees often collect environmental samples from soil or utilities located within these features. This policy provides guidance for working in or around trenches and excavations.

D. TRAINING:

All supervisors and employees working in or around trenches and excavations must be trained in trench and excavation safety procedures. EHS Supervisors or their designee shall be trained in the duties and knowledge of a competent person to recognize hazards and understand the safety requirements associated with excavations, trenches, and applicable engineering controls for personal safety reasons. EHS employees shall have a basic understanding of excavation and trench related hazards, protective systems and egress requirements.

EHS' Occupational Health and Safety (OHS) unit will provide training to employees. All training must be documented by supervisors. Other APP chapters may apply to work in or around trench and excavations including fall protection (Chapter 11), ladder safety (Chapter 18) and confined spaces (Chapter 08).

E. PROCEDURES:

Entering excavations or trenches should be avoided, if possible. Often environmental samples can be collected from an excavator bucket or by personnel directly involved in the excavation. Supervisors and employees must communicate with the Competent Person responsible to determine if such action is feasible without compromising safety.

A Competent Person is defined by the following: One who can identify existing or predictable hazards in the surroundings that are unsanitary, hazardous, or dangerous to employees. The competent person must be authorized to take prompt corrective measures to eliminate excavation and trenching hazards. The competent person must demonstrate knowledge of WAC 296-155- Part N. Competent Persons are designated by a WSU entity or contractor responsible for the trench work.

When working near or entry into an excavation or trench is necessary, the following rules and procedures apply:

- Do not enter a trench or excavation greater than 4-feet in depth unless the Competent Person is present.
- Excavations or trenches less than 4-feet deep may be entered if a Competent Person clears the area of a potential cave-in.
- Do not enter a trench or excavation without supervision.
- Communicate your scope with the Competent Person to review ingress/egress routes, known hazards, PPE requirements and specific procedures required for entry or working nearby.
- Supervisors must ensure a hazard assessment is completed prior to entry into a trench or excavation. A generic hazard assessment form for trench and excavation work is found in Appendix A and may be used for this purpose. However, this must be reviewed with the employee to evaluate additional hazards as needed to support the work.
- All employees must comply with safety and health rules and practices on contractor controlled job sites. This includes specific requirements set forth by the Competent Person of a trench or excavation. Requirements may include additional PPE, safety clothing or areas designated for restricted access. Supervisors are responsible for reviewing these requirements and ensuring employee compliance in order to perform the work safely.
- Do not enter a trench or excavation if you recognize a serious safety issue. This may include, but is not limited to; improper shoring or sloping, water accumulation, improper or unsafe ingress/egress routes, indications of soil failure or stress/undercutting, hazardous air quality or unprotected utilities.

All employees may reference Appendix A to ensure safety measures and technical information have been addressed by the Competent Person prior to entry.

APPENDIX A - TRENCH EXCAVATION CHECKLIST

TRENCHING AND EXCAVATION CHECKLIST			
PROJECT TITLE:			
COMPETENT PERSON:			
SITE LOCATION:			
Overhead hazards (general):	PRE-JOB:	JOB START:	HAZARD CONTROL
Trees			
Arches/Bridges			
Overhead Power Lines			
Light Poles/Traffic Signals			
Other (list)			
Soil Conditions:	PRE-JOB:	JOB START:	HAZARD CONTROL
Depth of Excavation:			
Trench Length and Width:			
Soil Class. type (A/B/C):			
Type Of Test			
Spoils/Materials Set Back			
Other (list)			
Protective Systems:	PRE-JOB:	JOB START:	HAZARD CONTROL
Sloping/benching			
Shoring			
Box			
Fall Protection Plan			
Other			
Traffic Control	PRE-JOB:	JOB START:	HAZARD CONTROL
Street and Road Barricades			
Street and Road Signs			
Walkway Barricades and Signs			
Detour Plan			
Transportation Services			
Other			

Storm Water Pollution	PRE-JOB:	JOB START:	HAZARD CONTROL
Storm Drain Protection			
Air Quality Control-Dust Control			
Hydrant Back Flow Prevention			
Other (list)			
PPE/Personal Equipment:	PRE-JOB:	JOB START:	HAZARD CONTROL
Hard Hats			
Warning Vests			
Hearing Protection			
Eye Protection			
Personal Fall Protection			
Other			
Equipment on Site:	PRE-JOB:	JOB START:	HAZARD CONTROL
Water removal equipment			
Other (list)			
Utility Locates & Protection:	PRE-JOB:	JOB START:	HAZARD CONTROL
Gas lines			
Communication lines			
Power lines			
Water/sewer/irrigation lines			
Steam/condensate lines			
Chilled water lines			
Other (list)			
Trench Access and Exit	PRE-JOB:	JOB START:	HAZARD CONTROL
Ladder			
Ramp			
Other (list)			

CHAPTER 31 DANGEROUS AND UNIVERSAL WASTE MANAGEMENT

A. References

- a. [WAC 173-303 Dangerous Waste Regulations](#)
- b. [WAC 296-828 Hazardous Chemicals in Laboratories](#)
- c. [WAC 296-901 Hazard Communication](#)
- d. [WAC 16-228 General Pesticide Rules](#)
- e. [49 CFR Hazardous Materials Shipping](#)

B. Appendices

Appendix A: Chemical Collection Request (CCR)
Form.....16

Appendix B: Central Waste Accumulation Area (CWAA) Inspection
Form.....17

Appendix C: Shipment Checklist.....20

C. Introduction

The following plan provides information on requirements for the management of hazardous waste. The proper management of hazardous waste is necessary to ensure good stewardship of the environment, to protect WSU from unwanted citations and fines from regulatory agencies, reduce liabilities, to ensure safety of employees, students, volunteers and visitors, and to reduce disposal costs. This plan applies to maintenance activities, laboratories, offices, grounds and field activities performed by employees, students, volunteers or visitors.

D. Hazardous Waste Designation

The Department of Ecology (Ecology) regulates hazardous wastes for the State of Washington. “Hazardous” wastes are termed “Dangerous” by Ecology. When a waste material is generated, it must be determined if it is a dangerous waste in order to dispose of it in a proper manner. Waste designation is important, as many chemicals may appear non-hazardous, especially those at low concentrations, which could be regulated as dangerous waste in the State of Washington. Be aware that waste disposal recommendations found in Material Safety Data Sheets, books and researcher’s publications that describe waste disposal procedures may not apply in the State of Washington. The following list identifies common materials that often must be collected and managed as dangerous waste.

1. Most laboratory chemicals, their mixtures, and solutions (even very dilute solutions may require management as dangerous waste);
2. Expired chemicals that no longer have a use;

3. Pesticides, herbicides, paints, automotive and maintenance wastes; and,
4. Oils, cleaning wastes, batteries, all fluorescent light bulbs/tubes, aerosol cans, and electronics.

There are two ways to designate your waste. One is to designate the waste yourself, using information provided on the [WSU EH&S web site](#). The other way is to request an EH&S representative designate the waste. It is very helpful to have the following information available for the designator:

1. All chemical and non-chemical (contaminated paper, plastic, etc.) constituents and their estimated or known concentrations, including water. If material being disposed has a trade name, the actual chemical names of the ingredients are needed.
2. If it is corrosive the pH is helpful.
3. Safety Data Sheet (SDS).

E. Pollution Prevention

It is recommended to work with an EH&S representative before generating waste. This will allow time for possible substitution of chemicals or procedures to reduce or eliminate waste generation. EH&S will advise on ways to containerize the waste to reduce disposal costs.

It is also recommended that WSU units do not accept chemical donations or order chemical products in bulk to keep chemical inventories and wastes to a minimum.

Return pesticides, including experimental pesticides, to the vendor when projects are finished.

Each time a waste saving measure is implemented, the EH&S representative writes up the alternative method/action and puts in the waste file cabinet under "pollution prevention".

F. Labeling Hazardous Waste

Ecology refers to hazardous waste as "Dangerous Waste" thus labels follow the Ecology's regulations using the word "Dangerous Waste". Dangerous waste labels may be obtained from an EH&S representative, hazardous waste coordinator, or the EH&S website. An example of a waste label is provided below.

DANGEROUS WASTE	
CCR#: <u>90001</u>	Phone: <u>5-9999</u>
Bldg/Room: <u>EHS / 70</u>	
Major Hazard	
Flammable <input checked="" type="checkbox"/> Corrosive <input type="checkbox"/> Poison <input type="checkbox"/> Other: _____	
Constituents	
<u>Methanol</u>	<u>75</u> %
<u>Acetone</u>	<u>15</u>
<u>Water</u>	<u>10</u>
CWA Date	EH&S Use:
_ / _ / _	

The following information must be on the label:

1. The words, "Dangerous Waste".
2. The proper chemical name and known or estimated percentages. Do not use chemical formulae, abbreviations, or trade names. Include water and its percentage if present.
3. Primary hazard of the waste e.g. flammable, corrosive, poison.
4. The date the container is moved to the Centralized Waste Accumulation Area (the "CWA Date").
5. The CCR number (see Section VI), building, room number and phone number should also be on the label.

The waste container must be labeled when waste is first added to the container. All other labels, such as manufacturer's labels must be defaced or removed.

G. Hazardous Waste Containers and Accumulation

Satellite Accumulations Area (SAA) Procedures

These procedures are for the accumulation of hazardous waste in the area where they are generated. Each laboratory, program, or department may accumulate hazardous waste under *specific conditions* in a designated area under their control. This area is called the Satellite Accumulation Area (SAA). The following are the specific conditions:

1. Waste containers may be accumulated in a designated area at the location of generation. The area must be secured when not occupied.
2. Select a waste container that is compatible with the waste material.

3. The container must be in good condition, clean outside, and must have a tight fighting cap. Do not use ground glass, cork or rubber stoppers, parafilm, or snap cap lids.
4. Label the waste container before the first waste is added (see Section IV).
5. Waste containers must be closed at all times except when adding waste or removing waste.
6. Do not overfill containers, leave 2-3 inches of head space to allow for expansion.
7. Do not mix wastes in the same container unless directed by an EH&S representative.
8. Do not store incompatible waste containers together. Separate them using secondary containment (plastic tubs) or by distance, and store solids above liquids where possible.

Hazardous waste must be removed from the SAA to the Central Waste Accumulation Area (CWAA) within 3 days when any of the following occurs:

1. A waste container is full.
2. A waste will no longer be generated.
3. A chemical will not be used again.
4. An unknown chemical is discovered.
5. More than 2.2 pounds of an Acutely Hazardous Waste (see EH&S website for list, www.ehs.wsu.edu) or 55 gallons of waste has accumulated in the SAA.

After any of the above scenarios, a fill date should be written on the label and the generator shall complete an online Chemical Collection Request (CCR) Form. The form can be found at <http://www.ehs.wsu.edu/ccr/ccr.html>. This link provides step by step instructions. Once the submit button has been selected electronic copies will be sent to the EH&S representative. Print a copy of the CCR (see Section VI) and arrange a time with the Hazardous Waste Coordinator (HWC) to transfer the waste container to the CWAA.

H. Chemical Collection Request (CCR) Form

When a container is ready to be transferred (see Section V) from the Satellite Accumulation Area (SAA) to the Central Waste Accumulation Area (CWAA) a CCR must be completed. Listed below are the step by step instructions for filling out a CCR. The form can be found at <http://www.ehs.wsu.edu/ccr/ccr.html>. A sample CCR is provided in Appendix A.

1. *Generator Information includes:* Name of generator, phone number, mail stop, building, room number, email, and waste location (pull down menu of the different WSU locations)
2. *Constituents and Percentages:* List all chemical constituents and their estimated or known concentrations, including water. If material being

disposed has a trade name, the actual chemical names of the ingredients are needed. Click on the “Add This Constituent/ Percentage” button after each constituent and percentage/estimated percentage are entered. This section should match the information listed on the Dangerous Waste label and add up to 100%.

3. *Physical State*: Check the appropriate box; solid, liquid or gas.
4. *Number of containers*: List the number of containers that have the same constituents.
5. *Weight/Volume*: Type the container’s size and use the pull down menu to select appropriate units.
6. *Major Hazard*: Check the appropriate box e.g. flammable, corrosive or poison. This should match the information listed on the Dangerous Waste label.
7. *Secondary Hazard*: Check appropriate box or boxes. It is not required to have any secondary hazards, but you can have more than one.
8. *Additional information*: Please type in any information that could affect how a container is managed or handled.

Once all the fields have been filled, either select “Proceed to Data Verification” or “Clear Form”. “Proceed to Data Verification” allows the generator to verify information before electronically submitting to the EH&S representative. After reviewing information the generator can either “submit”, “submit and enter another”, or “edit form”.

Once submitted, the generator will receive an electronic verification that EH&S has received the CCR. A unique CCR number will automatically be produced for the form. This number should be written on the corresponding space on the Dangerous Waste label. Alternatively, print out a copy of the CCR generated label and affix it to the waste container(s). Print out a copy of the CCR generated label for the HWC’s records.

I. Central Waste Accumulation Area (CWAA) procedures

The cabinets inside the CWAA storage room are labeled with hazards: flammable, corrosive acid, corrosive base, toxic, and reactive that will match provided segregation information. The HWC and generator will arrange a time when they can deliver the container to the CWAA. The generator will transport the properly labeled (see section III) waste container to the CWAA. For transport, place the waste containers in secondary containment trays/buckets and segregate incompatible materials. The HWC will verify that the label matches the corresponding CCR submission.

Waste storage times for the CWAA may vary depending on the quantity and type of waste generated and stored at the WSU unit. Waste storage periods allowed by the Ecology will fall into a category of 90 day, 180 day, or longer under some

circumstances. An EH&S representative will help make this determination and arrange disposal through an approved hazardous waste vendor accordingly.

J. Hazardous Waste Coordinator's Responsibilities

The WSU unit must appoint an EH&S liaison and must train a Hazardous Waste Coordinator (HWC) to properly manage the handling and storage of hazardous waste. The Washington State Department of Ecology requires initial training as well as annual refreshers. The HWC must be trained on the following duties:

1. Upon receipt of a Chemical Collection Request (CCR) form and segregation information from the generator, the Hazardous Waste Coordinator (HWC) will arrange a time for the waste generator to transfer the containers to the CWAA.
2. When transferring the waste the HWC and the generator will, at the minimum, wear the following personal protection equipment (PPE): safety eye wear and disposable nitrile gloves. Depending on specific conditions other PPE may be required.
3. Before accepting the container from the generator the HWC should assess each container for integrity, compatibility with waste, proper labeling, container transfer date (the CWAA date), tightly secured lids, contamination on the outside of the container, and reasonable head space.
4. Carry a cell phone or radio during waste transfer if there isn't a phone or fire pull station in the CWAA, in case of an emergency.
5. Place each container in proper CWAA cabinet/shelf labeled for its hazard classification. Place solids on the upper shelves and liquids on lower shelves when possible.
6. The 90-day or 180-day clock (if applicable) begins once the first container of hazardous waste is placed in the CWAA. EH&S will determine storage restrictions and schedule waste shipments accordingly.
7. Maintain a CWAA Hazardous Waste inventory notebook by placing completed CCRs into the notebook.
8. Perform a weekly inspection of the CWAA (see section IX) when there is waste in the CWAA, and maintain the inspection records.

K. Central Waste Accumulation Area (CWAA) Inspections

The HWC must maintain a weekly inspection schedule for the CWAA when hazardous wastes are present using the "CWAA Inspection" form and detailed instructions found in Appendix B. If a discrepancy is found mark a "D" for that item and explain the discrepancy in the section at the bottom of the inspection form. The date, time, and name of inspector printed and signed must be on the form.

When a discrepancy is noted during an inspection, the HWC contacts whoever is responsible for correcting the situation and notifies them of the problem. When corrected, note the date, corrective action and initial next to the original discrepancy note. If during an inspection, there is an outstanding discrepancy noted, follow up on the status and note, if appropriate, on the inspection form.

The inspection forms must be retained for three years.

L. Hazardous Waste Disposal Shipment Procedure

The EH&S representative will arrange all shipments with contractors and be the main point of contact for the HWC and the contractor. The following steps should be taken by the EH&S representative.

1. The EH&S representative should schedule a hazardous waste shipment with an approved disposal contractor. The scheduled shipment date should be at least one week prior to the 90-day or 180-day storage limit (if applicable) to allow for emergencies.
2. Approximately 1 month prior to a waste shipment an EH&S representative should contact the site HWC and notify them of the shipment date.
3. The HWC will notify the sites waste generators of the upcoming hazardous waste shipment date and request submittals of CCR's for all wastes needing disposal not already in the CWAA. Half full containers should be submitted for disposal. CCR's should be submitted two weeks prior to the shipment date.
4. One week prior to shipment the EH&S representative should submit a rough inventory to the waste contractor.
5. Prior to the shipment the HWC should meet with the EH&S representative showing location of all hazardous waste to be disposed.
6. The EH&S representative needs to provide the contractor with access to the CWAA. The representative should also familiarize the contractor with the location of the nearest phone, emergency shower and eye wash unit, and fire extinguisher.
7. The EH&S representative needs to ensure that the contractor:
 - a. Knows which waste containers are being disposed.
 - b. Only package containers that have a CCR number on them. If no ID number is present, bring this to the attention of the HWC who can locate the generator to complete a CCR for the container.
 - c. Writes the CCR number on the contractor's drum inventory sheet.
 - d. Write the estimated weight of each container on the drum inventory sheet.
 - e. Write the Washington State and EPA hazardous waste codes on the drum inventory sheets.

8. EH&S representative should inspect the waste storage cabinets and area to make sure all wastes have been packaged and no waste spilled.
9. Use the Shipment Checklist (Appendix C) to: inspect drums, labeling of containers and truck, review manifesting paperwork for accuracy, and sign the paperwork. The EH&S representative is the only person authorized to sign the manifest and other shipping paperwork. Ensure each checklist task or item is completed before the contractor leaves.
10. The waste shipment's original copies of manifesting paperwork, shipment checklist, contractor's time and materials sheet, and CCRs should be placed in a file dated for the shipment and placed in the WSU location's central hazardous waste file. The EH&S representative should retain a copy of all shipment paperwork.
11. The EH&S representative will ensure that the HWC receives within 45 days an original copy of the manifest signed by the receiving facility. The HWC should place the original manifest with the other shipment paperwork that is stored in the central hazardous waste file.

M. Hazardous Waste Recordkeeping

A central hazardous waste file must be established at each WSU location. This file should contain the following:

1. Manifest paperwork for each waste shipment, including the signed returned manifest and certificate of disposal (CD)
2. Annual Dangerous Waste reports
3. Exception reports
4. Analytical data/testing for any waste
5. Chemical Collection Request (CCR) forms for wastes shipped for disposal
6. CWAA inspection records
7. Training records for HWC

Hazardous waste manifest and shipment records must, by WSU policy, be retained on site indefinitely.

Recycled materials such as, waste oil, Universal Waste shipment records, and pesticide redistribution records also need to be kept on file indefinitely.

An EH&S representative will audit the files annually to ensure completeness.

N. Training

Hazardous waste management requires varying levels and forms of training depending on the individual's tasks and responsibilities.

1. Waste Generator: Trained in the proper waste handling procedures. This would include: container selection and labeling, satellite accumulation

- procedure, emergency procedures, waste reporting and record keeping. Individuals should also be familiar with all components of their Lab Safety Manual and/or Hazard Communication Program.
2. Hazardous Waste Coordinator (HWC): Trained in the proper waste handling procedures and HWC duties. These would include: waste collection procedures, container labeling, CWAA procedures, CWAA inspections, emergency procedures, and record keeping. Individuals should also be familiar with all components of their Lab Safety Manual and/or Hazard Communication Program.
 3. EH&S Representative: Trained in the proper waste handling procedures and EH&S representative duties. These would include: waste designation, container selection and labeling, satellite accumulation storage procedures, waste reporting and record keeping, CWAA procedures, emergency response procedures, pertinent State of Washington Department of Ecology regulations and pertinent U.S. Department of Transportation regulations. Must also maintain US DOT Hazmat Employee training.

O. Universal Waste (Light Bulbs/Tubes, Batteries, Used Oil, Computer Waste)

Ecology regulates specific wastes as Universal Waste. If a facility chooses to manage waste under the Universal Waste regulations that material must be recycled with an approved vendor. Materials that WSU handles as Universal Waste are listed below, along with the specific waste management procedures.

1. Light Bulbs/Tubes

Compact fluorescent lamps (CFL), high intensity discharge (HID) and high pressure sodium (HPS) bulbs and fluorescent light tubes (FLT) must be collected for proper recycling. The CFL should be collected in separate boxes than the HID and HPS if possible. The FLT should also be collected in separate boxes from the other bulbs.

Burnt out CFL, HID, and HPS should be placed into the individual package the replacement bulb is supplied in. If this is not available, they should be placed in packaging (e.g. put it a small box, placed in bubble wrap, placed in a re-sealable bag) to prevent breakage. FLT should be placed in the boxes the new replacement bulbs come in or in boxes provided by Ecolights Northwest (WA State contract) or EH&S. Typically, the tines are bent slightly to distinguish old tubes from new tubes.

Packaged CFL, HID, HPS and FLT should be placed into appropriately labeled collection boxes. Collection boxes must be labeled with the words "Used Lamps", "Universal Waste Lamps", or "Waste Lamps", and the date the first lamp is placed into the box. For CFL, HID and HPS, plastic liners should be used in

the boxes to help contain the contents should the bulbs break. Collection boxes must be kept taped shut except when adding or removing waste. Any box that can be taped shut and has integrity may be used for the collection of CFL, HID, HPS and FLT.

In the case a CFL, HID, HPS or FLT is broken, staff must be trained to use appropriate personal protective equipment when cleaning up the tube. Staff must also be trained on how to properly clean up, contain and dispose of broken CFL, HID, and HPS.

- a. Protective equipment: Normal work attire with disposable gloves
- b. Sweep broken glass, lamp components, and lamp phosphor (the white powder inside) up and place into a plastic bag. A damp towel may be used to clean up remaining phosphor. Place any damp towels and used gloves into the plastic bag. Do not vacuum up the debris.
- c. The properly filled out Dangerous Waste label should be attached to the bag and a CCR submitted.
- d. The properly labeled bag should be taken to the CWAA where it can be sent out for proper disposal

Collection boxes must be kept in areas under the control of trained staff (i.e. mechanical rooms, storage rooms, janitorial closets, etc.) that are locked. The public should not have access to collection boxes unless a trained staff member is present.

Staff who will place CFL, HID, HPS or FLT into collection boxes must be trained to observe the above procedures. This is all the training that is required.

Once collection boxes are removed from the original building, they need to be stored in a weather-protected, locked enclosure until they are shipped off-site for recycling.

Collection boxes must be completely emptied or removed at least once each year. This should occur in time to allow the CFL, HID, HPS and FLT to be shipped off-site (to the recycler) prior to one year from the date the first CFL, HID, HPS and FLT was placed in the box. Environmental Health and Safety (EH&S) coordinates all shipments with WSU approved recycling contractors.

2. Batteries

All types of used batteries must be collected and recycled. Different types of batteries that are collected include:

Alkaline	Nickel Iron
Carbon Zinc	Nickel Metal Hydride
Lead Acid	Nickel Zinc

Lithium and Lithium Ion	Silver Oxide
Mercury	Sodium Chloride
Nickel Cadmium	

In order to comply with state and federal environmental regulations the batteries must be managed as Universal Waste. They must be collected in properly labeled containers in designated areas. The container shall remain closed unless a battery is being added. The attached label must say one of the following: Universal Waste - Batteries, Waste Batteries, or Used Batteries and have the accumulation start date (date the first battery was placed in the container). A trained employee periodically checks containers to verify container labeling and ensure guidelines are followed. When the containers are full or prior to one year from the accumulation start date, the batteries must be prepared for shipment.

Prior to shipment batteries must be sorted by type and placed separately into properly labeled, sealed containers. Terminals for all batteries, except alkaline and carbon zinc, must be taped. The containers are recycled using Washington State University approved recyclers. EH&S coordinates all shipments.

3. Used Oil

Used oil not contaminated with other chemicals is eligible for recycling and management under the Universal Waste guidelines. Used oil is collected in 55 gallon steel and poly drums or larger totes. The containers must meet the following requirements:

- Have the words "Used Oil" written on the container
- Container closed, except when adding or removing used oil
- Container stored inside or under cover
- If contaminated, manage the oil mixture as Dangerous Waste

An approved oil contractor periodically collects the used oil for recycling. A WSU employee must be present during transfer, sign the bill of lading, and ensure safe oil transfer practices are followed. Place the Bill of Lading in the hazardous waste shipment records file cabinet.

4. Electronic Components

Unwanted computers, computer components and other electronic equipment (printers, faxes, etc.), known as "e-waste", are collected for surplus or recycling. While items are waiting to be surplus or recycled, follow the labeling and storage procedures below.

1. Older computer monitors (e.g. not flat screen) must be labeled with an accumulation start date, and the words “used cathode ray tubes – contains leaded glass” and “do not mix with other glass materials”.
2. Additional computer components and electronic equipment must be labeled with an accumulation start date, and the words “do not mix with other glass material” and “used electronic products-contains circuit boards”.
3. Computer monitors, computer components and other electronic equipment must be stored inside or under cover from weather/precipitation.
4. If an electronic component is broken during collection or storage, WSU personnel should clean up the debris using a broom and dustpan. The solids are placed in a bag and the sealed bag is treated as Dangerous Waste (see Section IV).

Departments wanting to surplus or recycle e-waste start by submitting a request to WSU-Pullman Surplus Stores. Instructions and the on-line surplus request form are located at:

http://facops.wsu.edu/Surplus/sur_disposal.htm#Computer_Hard_Drive_Destruction . After completing and submitting the on-line surplus form, WSU-Pullman Surplus Stores staff will arrange for picking up the e-waste (Pullman and Whitman County) or evaluate whether there is enough value to warrant shipping the e-waste to Pullman from outside Whitman County. For WSU facilities outside of Whitman county (and particularly west of the Cascade Mountains) there is typically not enough value so WSU-Pullman Surplus Stores will do the paperwork to transfer the e-waste to the State of Washington Surplus. WA Surplus will then contact the WSU representative (the person who originally completed the on-line WSU surplus form) to make arrangements to pick up the e-waste and take it to their main surplus facility for processing. There is no fee for this procedure. If you have any questions regarding e-waste surplus/recycling contact WSU-Pullman waste management at finchr@wsu.edu or 509-335-4630.

For e-waste with hard drives that are being transported to WSU-Pullman Surplus Stores there is no need to swipe (permanently erase) hard drives. WSU-Pullman Surplus Stores erases hard drives as part of their surplus service. For hard drives going to WA Surplus each department is responsible for swiping/erasing their hard drives (or rendering them unreadable by physically damaging them) to ensure that no sensitive information is released. If the department doesn't have the ability to swipe hard drives, the hard drives can be removed and mailed to WSU-Pullman Surplus Stores who will provide the service at no charge.

P. Facilities Operations/Maintenance Wastes

Maintenance activities such as vehicle and equipment repair, painting, pesticide applications, construction projects may generate wastes, several of which may be regulated as dangerous waste. Dangerous wastes created by maintenance

activities must be managed as stated in this procedure. Never dispose of shop fluids via storm drain, septic tank, dry well, dumpster, or sewer.

Specific handling procedures apply to spent materials for them to qualify as recyclable materials, see Section XIII for guidance. Keep waste streams separated when collecting for disposal or recycling. Fluids that become contaminated with chlorinated products, solvents, and metal working fluids must be treated as dangerous waste. Do not pour these wastes into the Used Oil containers. Only trained and authorized staff should place fluids into recycle/waste containers.

Some material does not designate as Universal Waste or Dangerous Waste, but still should be recycled. Following is a list of common materials used in maintenance and how they should be handled. When feasible, recycling, in lieu of disposal, is a more cost effective and environmentally friendly option for handling spent materials. Recycling records must be maintained with hazardous waste files (file all bills of lading).

SPENT MATERIAL	ACTION	LABEL	WASTE DESIGNATION
Lead-acid batteries	Recycle with vendor or Battery X-change twice yearly or is hazardous waste	"Spent Battery for Recycle Caution Corrosive" and accumulation start date	Recycle or hazardous waste if can't recycle
Batteries other than lead acid	Recycled through approved vendor	"Universal Waste-Batteries" and accumulation start date	Universal waste
Oil filters	Drain filters for 24 hours & recycle metal with local metal recycler	"Used Oil Filters for Recycle"	Recycle or local landfill approval needed for drained filter disposal
Transmission filters	Drain filters for 24 hours & recycle metal with local metal recycler	"Used Transmission Filters for Recycle"	Recycle or local landfill approval needed for drained filter disposal
Fuel filters	Manage as hazardous waste	Use hazardous waste label	Hazardous waste
Vehicle oil	Recycle with approved recycler if no synthetic or chlorinated products, or solvents	"Used Oil"	Recycle or hazardous waste-designation depends on generator procedures
Transmission oil, gear oil, hydraulic fluid, differential fluid	Recycle with used oil if no synthetic or chlorinated products or solvents	"Used Oil"	Recycle or hazardous waste-designation depends on generator procedures
Brake & Power Steering Fluid	Manage as hazardous waste	Use hazardous waste label	Hazardous waste
Antifreeze	Recycle through approved local vendor	"Spent Antifreeze for Recycle Caution Toxic"	Recycle or hazardous waste-designation depends on generator procedures
Parts cleaner	Dispose of through hazardous waste vendor or recycle through supplier	Depends on product	Non-hazardous waste, reduced hazardous waste or hazardous waste depending on product selected & generator procedures
Carb cleaner	Manage as hazardous waste	Use hazardous waste label	Hazardous Waste
Spray Cabinet Washers	Testing of discharge required. Local sewer authority needs to approve discharge. May need to be closed system.	NA	Non-hazardous or hazardous waste designation depends on generator procedures. Testing required.
Evaporators and hot tanks	Not recommended -contact EH&S for options	NA	Hazardous waste
Shop Towels/Wipers	Contact EH&S for guidance	Contact EH&S for guidance	Laundry, landfill or hazardous waste-designation depends on generator procedures
Solvents/Paint Thinners	Manage as hazardous waste	Use hazardous waste label	Hazardous waste
Aerosol cans (empty or containing paint)	Manage as hazardous waste	Use hazardous waste label	Hazardous waste
Bead blast residue from parts stripper	Hazardous waste designation needed (lab test) esp. if cleaning painted parts	"Used Bead Blast Caution Silica Dust" Or use hazardous waste label	Non-hazardous or hazardous waste-designation depends on generator procedures
Metals	Local vendor	Store under cover/Label area "Metals for Recycle"	Recycle
Spent tires	Landfill or find local recycler	Store under cover	Recycle or Landfill
Oil Water Separator sludge	Pump sludge via local approved vendor or ship via hazardous waste vendor	If stored for shipping use hazardous waste label	Non-hazardous or hazardous waste designation depends on generator procedures
Shop floor wash water	Seek permission from local sewer authority to put down drain	NA	Non-hazardous or hazardous waste designation depends on generator procedures
Freon and Asbestos Brake	Take older vehicles to authorized shop for	NA	Hazardous waste

SPENT MATERIAL	ACTION	LABEL	WASTE DESIGNATION
Pads	service, if shop doesn't have proper capture equipment		
Fluorescent lights & other mercury containing equipment	Recycle through State contract recycler	"Universal Waste Lamps" and accumulation start date	Universal waste
PCB containing equipment including transformers	Dispose of through hazardous waste vendor or vendor designated by EH&S	Use hazardous waste label and TSCA signage	Hazardous waste (TSCA rules not RCRA apply)
Paint	Recycle or dispose of via hazardous waste vendor	"Paint for Recycle" or use hazardous waste label	Recycle or hazardous waste
Pesticides	Dispose of through vendor who sold product, WSDA event, or hazardous waste vendor	Use hazardous waste label	Hazardous waste

Q. Pesticides

Pesticides, research, experimental or otherwise, provided to WSU by manufacturers, distributors, or field representatives need to be returned to the supplier when projects are finished. This practice saves the university money and storage room, and prevents unnecessary waste generation. Suggestions for carrying this out are as follows:

1. Have a written agreement with the supplier, before receiving the material that commits the supplier to take back the unused material at the end of the spray season or research project. Work out return logistics before accepting the pesticide.
 - a. A suggestion to help encourage company representatives to pick up the surplus materials is to dedicate a set of shelves in the pesticide storage building where returns are placed. Label shelves by company. When company representatives come to visit, they learn over time to check these shelves for return pesticides. This then becomes a service that representatives can provide.
 - b. Mailing Pesticides: Mail back pesticides in the same shipping containers they were sent in (requires the containers be saved). If pesticide is mailed, have the company confirm and/or provide the necessary shipping labels, hazard labels, bill of lading, and packaging. **DO NOT** mail improperly packaged or labeled pesticides as *large monetary fines* may be issued when hazardous materials are not packaged per DOT shipping regulations. For assistance with shipping hazardous materials contact the WSU Office of Research Assurances at 509-335-7183.
2. Only receive/accept the pesticide quantities needed for the season. Calculate closely how much material is needed and request suppliers repackage pesticides to provide only that amount. Arrange for suppliers to send additional small amounts of product, if the initial estimates prove inadequate.
3. Coordinate with EH&S to dispose unwanted/outdated pesticides through the Washington State Department of Agriculture pesticide disposal program.
4. Donate registered pesticides (not experimental). Unused pesticides that are registered can sometimes be used by local growers. In order for this to happen:

- a. Use WSU extension agents familiar with various growers and grower commodity groups as the go-between in locating growers able to take WSU's unused pesticides.
- b. Only distribute pesticide(s) to a person who is a licensed pesticide applicator that will use the pesticide only on crops delineated on the label.
- c. The WSU employee donating a pesticide must validate and record in writing the name of the person the pesticide was donated to, their applicator's license number, and the intended pesticide use. Record and maintain this information in a pesticide redistribution file. Store this file with the location's other waste records.
- d. The unused pesticide must be redistributed in a timely manner so it can be applied by the grower while the pesticide is not expired. For example, some pesticides, if over-wintered, can freeze causing them to be unusable and a disposal problem for the grower.

I have read and understand this training material:

Printed Name: _____

Signature: _____

Date: _____

APPENDIX A

Chemical Collection Request

Name: Mail Stop:
 Phone: Building:
 Email: Room:
 Location:

Constituent Percentage

Complete names ONLY. Do not use a % symbol
 No formulas, abbreviations
 Constituent: Percentage: %

Current Constituents:

Methanol	- 50 %	<input type="button" value="Remove"/>
Chloroform	- 25 %	<input type="button" value="Remove"/>
Ethyl acetate	- 15 %	<input type="button" value="Remove"/>
Water	- 10 %	<input type="button" value="Remove"/>
Total Percent: 100 %		

Total must add up to 100%

Physical State:

Solid Liquid Gas

Number of Containers:

Weight/Volume:

Major Hazard:



Flammable



Poison



Oxidizer



Explosive



Air/Water Reactive



Corrosive

Secondary Hazard(s):



Flammable



Poison



Oxidizer



Explosive



Air/Water Reactive



Corrosive

Additional Information:

R.

Appendix B
Central Waste Accumulation Area Inspection Form

Time and Date Inspected				
Inspector (print)				
Inspector (signature)				
Containers				
Proper Labeling				
Proper Waste Segregation				
Secondary Containment				
Spills/Leaks				
Aisle Space				
Storage Facility				
Secure: Area Locked				
Signage Present				
Eyewash/Shower Operational				
Fire Extinguisher Charged				
First Aid Kit Present				
Spill Supplies Present				
Communication Devices				
Record Keeping				
Chemical Collection Request Forms Complete				

Indicate any discrepancy with a "D" and a note in the section below.

Discrepancy

Date

Corrective Action

Initials

Centralized Waste Accumulation Area Inspection Instructions

The Centralized Waste Accumulation Area (CWAA) inspection log meets all the requirements set forth in WAC-173-303. Inspections need to be completed weekly when Dangerous Waste is present in the CWAA. Inspection logs need to be kept on site for a minimum of three years.

Items on the inspection log should only be marked with a “D” if a deficiency is noted. If there are no deficiencies or a particular item is not applicable, the item should be left blank.

Containers

Proper labeling: This section is to verify that all waste containers are properly labeled with the words “Dangerous Waste”, major hazard, and list of all constituents. Each container should have an accumulation start date. The accumulation start date is when the container was moved to the Centralized Waste Accumulation Area (CWAA).

Proper Waste Segregation: Verify that incompatible waste materials are not being stored next to each other. Separation of incompatible materials can be accomplished through techniques such as use of storage cabinets or plastic tubs.

Secondary Containment: Visually verify that the secondary containment is in working condition and is not contaminated because of leaking containers.

Spills/Leaks: Verify the integrity of all containers by checking for visible leakage.

Aisle Space: If drums are stored in the CWAA there must be a minimum 30 inch aisle space between rows to allow for visual inspection of containers.

Storage Facility

Secure, Area Locked: Doors should be checked to verify they are operable and locked.

Signage Present: Verify that the warning signs are present and information is decipherable. The sign should include 24-hour emergency phone numbers and contact names.

Eyewash/Shower Operational: Make sure location of emergency eyewash/shower is known and accessible by all personnel working in the CWAA. Verify that emergency eyewash/shower has been tested according to WAC standards. A tag indicating date of last test should be visibly attached to equipment. The test should have been completed within the last 12 months.

Fire Extinguishers Charged: Make sure fire extinguishers have been tested according to Uniform Fire Code. A tag indicating date of last test should be visibly attached to fire extinguisher. The test should have been completed within the last 12 months. Personnel who are expected to use fire extinguishers must receive annual fire extinguisher training.

First Aid Kit Present: A first aid kit should be accessible to personnel working in the CWAA. If a first aid kit is not located in the CWAA, all personnel should know the location of nearest kit.

Spill Supplies Present: Spill control materials should be available to personnel working in the CWAA. Personnel must receive spill control training. Additionally, personnel should be familiar with the use and limitations of the spill control materials.

Communication Devices: Ensure that the communication devices (telephone, 2-way radio, cell phone, etc.) are working. The type of communication devices should be known and accessible to all personnel who work in the CWAA.

Record Keeping

Chemical Collection Request Forms Complete: Ensure every waste container has a corresponding Chemical Collection Request form that has been submitted.

Discrepancy/Date/Corrective Action/Initials

If any item is marked with a "D", the deficiency should be noted here with a brief description of the problem. Once the corrective action has taken place briefly describe the actions taken along with the date and your initials.

At the top of the CWAA inspection log please print and sign your name and mark the time and date of the weekly inspection.

Appendix C
WASHINGTON STATE UNIVERSITY
WASTE SHIPMENT CHECKLIST

WSU SITE _____ SHIPMENT DATE _____ CONTRACTOR _____

1. Following shipping documents completed, and original copy retained:
 - Manifests Land Ban Waste Profiles Drum Inventory Sheets
 - Contractor Time & Materials Report WSU Chemical Collection Request Forms
 - Other _____

2. Manifest and Document Review
 - Manifests signed/dated WSU (by) _____ & Transporter
 - Drum Inventory Sheets: Inventory # Container Count _____ Drum Count _____
 - Waste Profiles reviewed & signed Land Ban signed CD requested
 - Contractor Time & Materials Sheet Correct & Signed Drum count confirmed
 - 24 hour Emergency phone# listed on manifest

 - Correct generator & attention information

3. Shipment Check
 - Inspect drums (labeling, drum count) Inspect truck (proper placarding)

4. Shipment Follow-up
 - Original shipping documents to site file
 - Copy of shipping documents to: EH&S, P.O. Box 641172, Pullman, WA 99164
 - Receipt of returned manifests Copy to EH&S
 - Receipt of Certificate of Disposal (CD) Copy to EH&S *