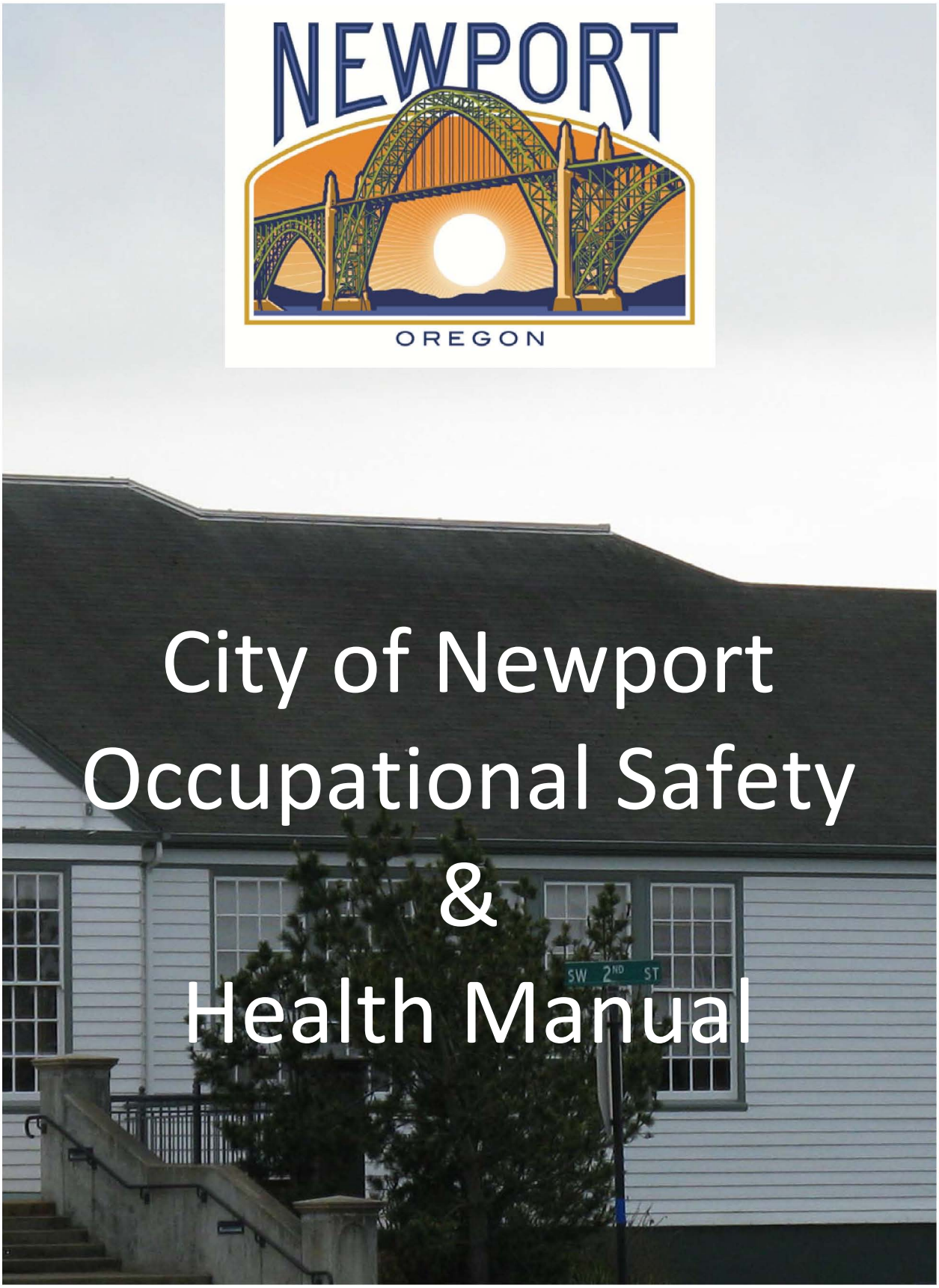


City of Newport Occupational Safety & Health Manual

Contents

CITY OF NEWPORT

SAFETY & HEALTH VISION

We hold in high regard the safety, welfare, and health of our employees. Every reasonable effort shall be made to maintain a safe working environment. No job will be considered so important and no order so urgent that we cannot take time to perform our work safely.

We will establish and require a loss prevention program that emphasizes the integration of safety and health measures into each job task so that safety and job performance become inseparable. This will be accomplished through the cooperative efforts of all employees who will work together to obtain the lowest possible workplace accident rates.

This safety manual will be used as a tool for more effective safety and claims management. A safety committee has been established to coordinate the safety programs and assist management staff in promoting safe working conditions. Safety orientation for new and transferred employees, timely and appropriate training, management/employee safety committee, an active self-inspection program, proper mechanical guards, and personal protective equipment will be some of the tools used to maintain a safe work environment.

We recognize the need to provide a workplace which meets the ergonomic needs of its employees. All work sites will be evaluated for design, layout and operation using an ergonomic approach. Employees identifying a job site needing modification should notify their Department supervisor.

If you have any questions about our safety policy, rules, or programs please contact your Department supervisor. I will receive the minutes from the safety committee meetings and will take an active role in overseeing that our safety program is effective. Our loss prevention program will be evaluated annually to ensure its success.

By accepting mutual responsibility to operate safely, we will all contribute to the well-being of one another and subsequently our organization.

_____

City Manager-Jim Voetberg Date

INTRODUCTION

Safety & Health Manual

This safety manual is divided into 2 main Parts. One Part deals with the OSHA Administration Programs and the second Part addresses specific OSHA Safety and Health programs. There is an interconnection among the Parts and chapters thus for the full benefit of our safety program it is important that each of our employees be informed of our safety programs.

Each section is organized with a general overview of the topic, the safety policy including employee responsibilities and specific safety rules. The material is not intended to replace the need for on-going review of safety issues and compliance needs, but is to set out expected safe behaviors and conditions by which our employees will operate. This manual does not cover all safety related issues but is to serve as an overall guide in relationship to safety and health OSHA compliance and issues.

Management is responsible for ensuring that necessary revisions to the Safety Manual and employees are informed of the changes. The Safety Committee is also responsible to make recommendations for changes.

If you have a question about the manual please ask your Supervisor.

PART 1

Management's Safety/Health Responsibilities

OR-OSHA mandates that employers provide a safe and healthful workplace. This is the cornerstone of all their programs. Most of the deficiencies we see sited by OR-OSHA's compliance division at our member entities are related to the ability to demonstrate that they are in compliance with the rules either through safety committee minutes, training records or policies and procedures.

We have summarized entity management responsibilities below as an easy to use self-audit guide. If you can read and answer how you will demonstrate compliance with each checked point, you should be in good shape for this component of the OR-OSHA rules.

- Overseeing the investigation of all accidents, documenting near-misses or hazardous conditions, and assuring that appropriate steps for corrective action are implemented in a timely manner.
    - In the event of an accident, supervisors conduct a complete and thorough investigation before leaving work for the day. If necessary because of a doctor visit, an 801 is completed and faxed to CIS (our workers' compensation provider).
    - The safety committee reviews all incident/accident reports during their regular meetings. Where appropriate, they will make recommendations to management for improvements or prevention (see safety committee minutes).
- Ensuring that safety and health regulations are observed.
- Developing and implementing a safety program.
- Assisting in preparation and revision of safety policies and implementation of the entity's safety rules.
- Monitoring and auditing each department or facility for safety and health hazards.
- Establishing or approving procedures for hazardous operations.
- Reviewing and approving the safe facility design, layout and alteration/retrofitting.
- Maintaining weekly contact with any worker who is away from work due a work related injury or illness, and documenting the contact as a written record.
- Completing a safety orientation for new employees.
- Conducting monthly safety meetings.
- Recommending safe work procedures, practices and personal protective equipment.
- Maintaining the OSHA injury and illness logs (OSHA 300) and complying with state and federal injury reporting requirements.
- Retaining exposure and medical monitoring records as required.
- Monitoring the number of workers' compensation claims and providing temporary modified work as employees are released to light duty.
- Assisting supervisors with safety performance issues, if requested and/or if a specific trend of injuries is noted.
- Administering all other insurance programs including property, liability, workers' compensation, Employee Assistance (EAP) and employee health insurance.

SAFETY RESPONSIBILITIES

Purpose

Most public employees are covered under OR-OSHA Division 2, the General Industry Standard. This health and safety manual complies with the requirements of the OR-OSHA Division 2 standard.

There may be some employees who perform job tasks that are covered by additional safety and health requirements. For those employees, we will refer to the applicable regulations and comply with the additional code requirements in our health and safety program. These employees may include:

- Employees or contractors who are engaged in construction work including demolition, blasting and use of explosives, and power transmission distribution and maintenance work. These employees will need to comply with the OR-OSHA Division 3, Construction (1926) Standard.
- Employees who conduct ocean and navigable waterway rescues. These employees need to comply with the OSHA Division 5 Maritime Activities Standard (29 CFR 1915, 1917, and 1918) and applicable Coast Guard regulations.
- Employees who are responsible for operation and maintenance of electric power generation, control, transformation, transmission, distribution lines and equipment. These employees are required to comply with the OR-OSHA 1910.269 Electric Power Generation, Transmission and Distribution Standard, Division 2 Subpart R. This includes those employees who conduct line-clearance tree-trimming operations.
- Employees who perform electrical installations and utilization equipment installed or used within or on buildings, structures and other premises are required to comply with the Federal OSHA 29 CFR 1910.302 Electric Utilization Systems Standard, Division 2 Subpart S.

Applicable Legal Standards
Federal: 29 CFR 1910.269
Federal: 29 CFR 1910.302
State: OR-OSHA Division 2, General Industry Standard
State: OR-OSHA Division 3, Construction (1926)

Management Commitment

Just as employers have responsibilities for our various job duties, we also are responsible for workplace safety and must be accountable for meeting these responsibilities.

Management and supervisory personnel are accountable for the safety of employees working under their supervision, and will be expected to conduct operations in a safe manner at all times. Management has the overall responsibility for the establishment, implementation, administration, and governance of the entity's entire safety program. Management staff responsibilities include:

- Ensuring that safety and health regulations are observed.
- Developing and implementing the safety program.
- Assisting in preparation and revision of safety policies and implementation of the safety rules.
- Monitoring and auditing each department or facility for safety and health hazards.

- Establishing or approving procedures for hazardous operations.
- Monitoring and auditing the operation for safety and health hazards.
- Overseeing the investigation of all accidents, reporting near-misses or hazardous conditions, and assuring that appropriate steps for corrective action are implemented in a timely manner. In the event of an accident, conducting a complete and thorough investigation before leaving work for the day.
- Reviewing and approving the safety aspects of any facility layout, design, and alteration.
- Maintaining weekly contact with any worker who is away from work due to a work related injury or illness, and documenting the contact in a written record.
- Completing the safety orientation of new employee and conducting mandatory safety meetings and training.
- Maintaining the OR-OSHA injury and illness logs and complying with state and federal injury reporting requirements.
- Retaining exposure and medical monitoring records.
- Managing our workers' compensation program.
- Assisting supervisor with safety performance issues if requested, or in the event of a specific trend of injury types or sources.
- Administering all other insurance including property, liability, workers' compensation, and employee health insurance.
- Any supervisors or persons in charge of work are the agents of the employer in the discharge of their authorized duties, and are responsible for:
    - The safe performance of the work under their supervision.
    - The safe conduct of the crew under their supervision.
    - The safety of all workers under their supervision.

Employees' Responsibilities

Employees' role in safety is critical. Employees are responsible to follow proper safety and health practices. It is important that everyone report unsafe conditions to their supervisor and the Safety Committee so that the condition or facility can be corrected. Safe work practices are for all our employees' benefit.

Employees are responsible for:

- Carrying out each task using every required and reasonable precaution to protect themselves and co-workers from injury.
- Being alert to and reporting any unsafe conditions or practices observed to the immediate supervisor.
- Immediately reporting all injuries to their supervisors.
- Being familiar with and abiding by the safety policies.

Safety Committee Responsibilities

The Safety Committee's responsibility is to advise management on safety related issues in the work place and to provide leadership in protecting the safety and health of all employees. The Safety Committee plays an essential role in the overall safety effort and serves as the primary means of communicating and exchanging information on safety issues. Safety Committee responsibilities include:

- Recommending programs for the safety and health of employees.
- Monitoring the programs and work procedures designed for employee safety and health.
- Considering individual employee concerns and suggestions regarding safety and health, communicating with the management team regarding concerns and suggestions, and reporting back to the individual employee in a timely manner.
- Reviewing employee safety input forms and recommending appropriate corrective action in writing.
- Promoting programs to improve the safety, health, training, and awareness of all employees.
- Participating in the investigation of safety hazards as needed.
- Providing a means for employees to work together on identifying hazards and developing acceptable solutions to safety problems.

Safety Committees meet monthly and will provide reports to the management team(s).

Though the Safety Committee's role is advisory, all reasonable means will be taken by management to address the concerns of the committee.

Safety Committee Chair Responsibilities

- Presenting to the management team(s) safety policies to meet OR-OSHA compliance.
- Assisting the Safety Committee with the implementation of all safety policies and procedures.
- Evaluating safety performance issues upon request or if specific injury trends are identified.
- Working with the Safety Committee to develop or recommend safety-training programs.
- Developing and or maintaining educational and instructional materials.

Safety Communication Network

As reflected in the management commitment statement, maintaining a safe place of employment requires a cooperative effort on the part of each employee. Essential for such cooperation is a communication system capable of conveying safety information. The following outlines our communication network:

1. Written communications (either on paper or the entity's intranet), to be available to the employees in each department, regarding major and/or complex issues.
2. Safety Committee meetings should be held as needed but at least every month unless all employee safety meetings are held. These meetings will have a standard agenda that shall be revised as appropriate and participants will report on various safety/health related issues. The agenda for Safety Committee meetings should include (but are not limited to):
    a. Review of applicable regulatory issues.
    b. Status of current safety issues.
    c. Review of accidents that have occurred and corrective actions taken. This includes a discussion of any trends or near-miss reports.
    d. Discussion of any major process and operational changes that may affect safety or environmental programs or result in additional planning.
    e. Each department representative or the supervisor will report on the status of on-going safety training and any assistance needed.

3. Getting safety input from individual employees can be accomplished through a variety of avenues including:
    a. Addressing the issue with the immediate supervisor.
    b. Reviewing with any level of management, via our open-door policy.
    c. Submitting a written safety recommendation.
    d. Reviewing with a safety committee representative.

DISCIPLINARY ACTIONS FOR UNSAFE PRACTICES

All employees will follow our basic safety rules. If employees knowingly violate our safety procedures and rules, which includes behaviors that jeopardize their own and others' safety, disciplinary action may be taken.

OCCUPATIONAL HEALTH AND SAFETY/LOSS PREVENTION PROGRAM

The safety and health of our employees is very important to the City of Newport. No employee will be required to do a job that he or she considers unsafe. The City will comply with all applicable Oregon OSHA workplace safety and health requirements and maintain occupational safety and health standards that equal or exceed best practices.

THE CITY OF NEWPORT will establish a safety committee, consisting of management and representatives, whose responsibility will be identifying hazards and unsafe work practices, removing obstacles to preventing accidents, and help evaluate our efforts to achieve an accident and injury-free workplace.

We will strive to achieve the goal of zero accidents and injuries. In doing so, the CITY OF NEWPORT pledges to do the following:

1. Recognize that management and employees share responsibility for a safe and healthful workplace.
2. We support the City safety committee by encouraging employee participation; consider all employee suggestions for achieving a safer, healthier workplace and regularly reviewing the City's safety and health program.
3. Training workers in safe work practices at hire and as policies, processes or equipment changes.
4. Enforce City safety rules and ensure that employees follow safe practices. If work rules or practices are not adhered to, the supervisor will follow the employee handbook/collective bargaining agreement when taking any corrective measures
5. Provide mechanical and physical safeguards wherever they are necessary. Provide employees with necessary protective equipment and train them to use and care for it properly.
6. Conduct routine safety and health inspections to find and eliminate unsafe working conditions, identify health and safety hazards and comply with all applicable Oregon OSHA safety and health requirements.
7. Investigate accidents to determine the cause and to prevent similar accidents from occurring in the future.
8. Evaluate workplace design, layout and operations utilizing an ergonomic approach.
9. Remind employees that they are expected to participate in safety and health program activities including, immediately reporting hazards, unsafe work practices and accidents to supervisors or a safety committee representative, wearing required personal protective equipment, and participating in supporting safety committee activities.
10. Conduct an annual evaluation of the company's loss prevention goals and activities based on entity or department specific concerns and current entity needs.

CityCounty Insurance Services provides our Workers' Compensation Insurance. They have loss control and industrial hygiene services available to our Entity.

SELF-INSURED LOSS PREVENTION PROGRAM

Purpose

OR-OSHA requires specific Loss Prevention Activities to be performed by group self insured Employers. As a member of CIS workers' compensation, The City of Newport is considered to be a self insured employer and must comply with the specific OR-OSHA self insured employer rules. This includes a written plan and specific activities.

Applicable Legal Standards

State: OAR 437-001-1055 & 1060

Written Occupational Health and Safety Loss Prevention Program

The program's function is to address the loss prevention effort and inform management and employees of the availability and process for requesting loss prevention services.
The City's overall Safety Manual and in particular Part 1 Chapter 1 Sections A-D meets this requirement.

Required Loss Prevention Elements

The following elements are required by OR-OSHA for each group and self-insured employer. The overall operation of our safety program and recordkeeping will meet these elements.

1. Management commitment to health and safety.
   Method of compliance: The statement of commitment is primarily our Safety Manual but commitment is also shown by our responsiveness to the Safety Committee's concerns and recommendations.
   Recordkeeping: The Safety Manual and written responses to Safety Committee concerns and recommendations are maintained by the administration.
2. Accountability system for employer and employees.
   Method of compliance: Each employee's job performance includes review of safety behavior and activities.
   Recordkeeping: Human Resources retain employee performance records and any record of discipline for safety issues.
3. Training practices and follow-up.
   Method of compliance: Training is the responsibility of the department supervisor(s). We have developed a schedule for training and have identified the specific training needs.
   Recordkeeping: The record of training is maintained by the department supervisor and/or Human Resources or designee.
4. A system for hazard assessment and control.
   Method of compliance: The Safety Committee's quarterly inspections and supervisor's routine review of their work activities at the various locations will serve to ensure that we have appropriate auditing. OR-OSHA expects that the quarterly inspection assess all the employer's locations/operations. In addition our CIS Risk Management Consultants conduct periodic inspections at our facility.
   Recordkeeping: The primary records of the inspection and audit services will be maintained by administration. The Safety Committee will make a record of each quarterly inspection; this will be placed in the Safety Committee Inspection file. Any written inspection report done by a supervisor (i.e. lock out tag out annual inspection) will be kept in the supervisor's/department's safety file.

5. A system for investigating all recordable occupational injuries and illnesses that includes corrective action and written findings.
   Method of compliance: Management and/or the supervisors are responsible for completing accident investigations. Specific method and training materials are provided in Part 2 of the Safety Manual. The Safety Committee also reviews and comments on the accident investigations and they may participate in some of the investigations.
   Recordkeeping: The primary accident investigation records maintained by administration.
6. A system for evaluating, obtaining and maintaining personal protective equipment (PPE).
   Method of compliance: Each Department shall review, select and purchase appropriate PPE and that the PPE are properly used and maintained. The Safety Committee and others conducting daily or quarterly inspections will review the PPE program's adequacy. Section 7 provides PPE policy, selection, maintenance, and training information.
   Recordkeeping: The primary records for PPE inspection are maintained by the department supervisors.
7. On-site routine industrial hygiene and safety evaluations to detect physical and chemical hazards of the workplace, and the implementation of engineering or administrative controls.
   Method of compliance: Basic occupational safety and health inspections are done by the Safety Committee and when available with the supervisors. More technical assistance is provided by our CIS Risk Management Consultants, OR-OSHA consultants and private safety and industrial hygiene consultants.
   Recordkeeping: The primary records of the inspection and audit services will be maintained by the managers, supervisors and Safety Committee.
8. Evaluation of workplace design, layout and operation, and assistance with job site modifications utilizing an ergonomic approach.
   Method of compliance: Basic ergonomic inspections are done by the Safety Committee. More technical assistance is provided by our CIS Risk Management Consultants, OR-OSHA consultants and private consultants.
   Recordkeeping: The primary records of the ergonomic survey and findings will be maintained by the supervisor or manager of the group or department receiving the evaluation.
9. Employee involvement in health and safety efforts.
   Method of compliance: This is a primary concern for management and the Safety Committee. Routine meetings or staff meetings are the primary focus for employee involvement. Safety is a daily activity and our employees are expected to perform their work as instructed for their own and coworker safety.
   Recordkeeping: The primary records of employee involvement are found in the supervisor's safety inspection records, minutes of staff meetings or in Safety Committee minutes.
10. An annual evaluation of the employer's loss prevention activities based on the location's current needs.
    Method of compliance: An annual report will be prepared in January or June of each year for the previous year's activities. The report will be prepared by the management staff, the Safety Committee, department managers and/or supervisors.

Recordkeeping: The annual reports will be maintained by the Administration and available to the Safety Committee and OR-OSHA upon request.

RECORDKEEPING

Purpose

The OR-OSHA Safety Program requires that many different types of records be retained. This safety manual has been written so that the City of Newport and/or department initiating the records are required to keep a copy and forward a copy to the department head or HR as the primary "keeper of records".

All work-related fatalities, injuries, and illnesses will be immediately recorded and reported. Form 801 is required, and must be completed within five calendar days of the time the fatality, injury, or illness occurred. The supporting information shall be documented on these forms:

- Incident/Accident Report (for all incidents, injuries, and illnesses)
- OSHA 300 Log (summary of work related injury/illness)

Applicable Legal Standards

Applicable Legal Standards for recordkeeping are explained in detail below.

Recording Work-related Injuries and Illnesses

Injuries or illnesses are work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness. These incidents can result in one or more of the following:

- Death
- Days away from work
- Transfer to another job
- Medical treatment beyond first aid
- Loss of consciousness
- Diagnosis of a significant injury or illness

Note: Hearing loss is recorded on the OSHA 300 Log when an annual audiogram reveals a Standard Threshold Shift (STS) in either or both ears and the hearing level in the same ear is 25 decibels (dBA) above audiometric zero.

Note: Needle sticks and sharps injuries that are diagnosed later as an infectious Bloodborne disease must be updated on the 300 Log to reflect the new status or classification.

Note: In addition, health care employers as defined in ORS 654.001 to 654.295 must record assaults against employees on the Health Care Assault Log. If the incident results in a serious injury or fatality, it must be immediately reported to OR-OSHA, and recorded on the OSHA 300 Log.

At the end of the year, management will review the Log to verify its accuracy, summarize the 300 Log information on the 300A summary form and certify the summary. This information will then be posted for three months, from February 1st to April 30th. These records will be kept for five years following the calendar year covered by them.

Table of Required Records

The following chart shows what records must be maintained under the General Industry Standards. The Construction Standards have additional records that include these listed.

Record/Plan	Overall Plan	Written Type of Record		Retention Time
		Training	Inspection	
1. Injury Records				

437-001-700	x (complete			5 years
a. Form 300	w/in 7 days)			5 years
b. Form 801	x (complete			5 years
c. Form 300A	w/in 7 days)		x	5 years
d. Accident Investigation 437-001-0760(3)	x (post February – April) x each time loss accident			
*In addition, health care employers as defined in ORS 654.001 to 654.295 must record assaults against employees on the Health Care Assault Log. See OAR 437-001-0706.				
2. Employee Exposure 1910.20(d)		x		30 yrs + emp
3. Bloodborne Pathogens 1910.1030(c)(1)	x	x	x (incident investigation)	30 yrs + emp
4. Medical Plan & Records 1910.20(d) & 1910.151 & 437-02-161(4)	x			30 yrs + emp
5. Emergency Plan 1910.38(a)(2)	x			Not specified
6. Fall Protection 1926.502(k)	x	x	x	Not specified
7. Fire Plan 1910.38(b)(2)	x			Not specified
8. Specific Chemical Subs. (minimum requirements)*			x	30 yrs.
a. Exposure Record			x	30 yrs + emp
b. Medical Exams			x	most current

c. Resp. Fit Testing (in some cases) Example: Formaldehyde 1910.1048(m)(5)				
9. Asbestos Plan 1910.1001 1926.1101(k)	x	x	x	Current + 30 yrs
10. Hazard Communication				
1910.1200(e)	x			Need
a. Written Plan			x	current
b. MSDS or list		x		30 yrs +
c. Employee Training				emp not specified
11. Lockout/Tagout				
a. Written Procedures			x (annually)	Not specified
b. Periodic Audit		x		Not specified
c. Employee Training				Not specified
1910.147(c)(4)				

Record/Plan	Overall Plan	Written Type of Record		Retention Time
		Training	Inspection	
12. Hazardous Materials	x			Current plan
a. Written Plan		x(annually)		Current plan
b. Employee Training				
1910.120(p)(8)(ii)				
13. Laboratories	x	x	x	30 yrs + emp
1910.1450(e)			annual review	
14. Noise & Hearing Cons.			x	2 yrs
a. Employee Exposure			x	5 yrs + emp.
b. Audiogram			x	Current levels
c. Calibration Data				
1910.95(c)				
15. Personal Protective Equipment	x	x	x	Not specified
1910.132(d)				
16. Respirators				
a. Written Program	x			Not specified
b. Inspection			Monthly	
Maintenance				Not specified
c. Emergency Use Resp.				
1910.134(b)(1)				
17. Safety Committees	x	x	x (minutes)	3 yrs
437-001-0765				
18. Crane Inspections	**		**	
a. Daily			x	
b. Monthly			x	Not specified
c. Annually				Not specified
1910.179 -.182				
19. Fire Protection				
a. Fire Extinguishers			x (annual)	1 yr or replaced
			x (annual)	by a new
b. Standpipe & Hose			x	record
c. Fire Detection			(periodic)	Not specified
1910.157(e),				

1910.158(e) 1910.159(c), 1910.164(c)				Not specified
20. Mechanical Power Press 1910.217(h)(10) and (11)			x	Not specified
21. Safety Inspections/Audits 437-001-0760			x (quarterly by Saf. Comm.)	3 yrs
22. Confined Space Entry 1910.146(d) & (e)	x	x	x entry permit	1 yr - permit
23. Process Safety 1910.119	x (5 yr. updates)	x	x audits, incident records	Varies (see rules)
24. Welding 1910.252(xiii) & (xiv)			x (periodic)	Not specified
25. Lead Plan Gen. Industry 1910.1025(e)(3) and 1926.62 (maintenance or removal of lead painted or containing building materials)	x	x	x	Current + 30 yrs
26. General Instruction Supervision & Training 437-001-0760(1)	x	x		Not specified

* Chemical Substances Specific Standards include: acrylonitrile, asbestos, anhydrous ammonia, arsenic, benzene, carcinogens, ethylene oxide, formaldehyde, lead, vinyl chloride, DBCP, cadmium.

** Crane Regulation 1910.179-.182 requires daily visual inspections and CIS recommends daily inspections should be recorded in writing.

SAFETY AND HEALTH TRAINING PROGRAM

Purpose

A major component of this safety program is employee training. Training efforts will be directed at developing each employee's knowledge, skills, and understanding to allow them to work safely.

Applicable Legal Standards

Applicable Legal Standards for OR-OSHA training are explained in detail below.
New Employee Orientation

All new employees will participate in a "New Employee Orientation Program." Such training is conducted in a two-phase approach:

- The new worker will receive general information on City culture policies and benefits by the HR representative.
- Department related rules and information will be given by the supervisor of the department. Training will include a general understanding of all related safety programs and policies. Facility and job specific training will be given by the employee's immediate supervisor or lead worker before the employee will be allowed to begin actual work, and the training will be documented in the employee or department's training file.

Training Requirement Matrix

The safety manual and training matrix listed below identifies the possible training requirements for employees.

1. Some subjects are mandatory in nature, with OR-OSHA requiring their annual review:
    a. Emergency Response Plans (Chapter 2)
    b. Fire Extinguishers (Chapter 2, Part H)
    c. Hazard Communication (Chapter 5)
    d. Hazardous Energy Control - Lockout/Tagout (Chapter 6)
    e. Hearing Conservation - Effects of Noise Exposure (Chapter 7)
    f. Personal Protective Equipment and Respiratory Protection (Chapters 8-9)
    g. Asbestos Awareness (Chapter 11)
2. Other subject areas are deemed mandatory only for selected operations, or when employees change, such as:
    a. Confined Space Entry
    b. Hazardous Energy Control - Lockout/Tagout
    c. Bloodborne Pathogen Training
    d. Hazardous Materials - Waste Handling
    e. Welding Safety
    f. Safety Committee Training
    g. Fork Lift Operations

The following document is an employee training checklist to be used to track training needs and training dates.

Program	Training Frequency Initial	Annual	Retraining Required	Written Program
General Duty to Train	X		If program/hazards change	no
Accident Signs	X		If signs change	no
Crane Operator	X		Construction – 3 yrs General if changes or problems	yes
Electrical	X		Job duties change	no
Emergency Medical Plan	X		If plan changes – update	yes
Emergency/Fire Prevention	X		If plan changes – update	yes
Fall Protection (construction related)	X		If plan/equipment change or inadequacies found	yes
Fire Extinguishing System	X	X		no
First Aid/CPR	X		When available	no
Forklift Operator	X		Every 3 yrs classroom & practical	yes
Lockout	X		If plan changes or problems noted	yes
Mech. Power Press	X		Initial must remain competent	no
Power Platforms	X		Initial must remain competent	no
Pressure Vessels	Competent person required			no
Safety Committee	X		New members annual	yes
Welding	X		Initial must remain competent	no
Occupational Health				
Access to Exposure & Medical Records	X	X		no
Asbestos (awareness) Note: Extensive training for actual abatement or renovation)	X	X		yes plan & notification
Bloodborne Pathogens	X	X	When plan changes	yes
Confined Space	X		If plan changes/annual for rescue staff	yes
Chemicals *	X		If over action level	yes for some

Program	Training Frequency Initial	Annual	Retraining Required	Written Program
Hazard Communication	X		If new chemicals are used	yes
Haz. Mat'ls Response 5 levels 4 to 40 hours	X	X	Annual refresher is 8 hours	Yes
Hexavalent Chromium (employees who have the potential of being exposed above the action level)	X		Posting	yes
Laboratories	X		If plan changes/chemicals	yes
Lead (awareness) (note: extensive training for actual abatement and renovation)	X	X	Posting	yes
Noise	X	X		no
Personal Protective Equipment	X		If there are changes or problems noted	yes
Process Safety	X	X	Training certificate required	yes
Respirators	X	X	Or when changes or problems noted	yes

* Specific chemical substance standards include: acrylonitrile, asbestos, anhydrous ammonia, arsenic, benzene, cadmium, carcinogens, ethylene oxide, formaldehyde, lead, methylene chloride, vinyl chloride, DBCP, Pesticides.

NOTE: THIS LISTING DID NOT INCLUDE A VARIETY OF THE POSTING RECORDS AND DOES NOT INCLUDE ALL REFERENCES TO COMPETENT OR QUALIFIED EMPLOYEES. FURTHER THERE ARE ADDITIONAL OCCUPATIONAL HEALTH RULES SUCH AS ASBESTOS WHICH REQUIRE TRAINED EMPLOYEES BUT WERE NOT LISTED SEPARATELY.

ACCIDENT INVESTIGATION PROCEDURES

Purpose

The City of Newport's foremost goal is to prevent and eliminate work place accidents/illnesses. However, should they occur, management will thoroughly investigate to determine the cause(s) and appropriate corrective action to be taken to prevent future recurrence.
The City of Newport's focus is not simply on unsafe acts or conditions that may have led to the accident, but also on why the unsafe acts or conditions were present. From this perspective we are better able to identify any changes that are necessary.

Applicable Legal Standards

1. State: OAR 437-001-0760 Investigations of Injuries:
   "Each employer shall investigate or cause to be investigated every lost time injury that workers suffer in connection with their employment, to determine the means that should be taken to prevent recurrence. The employer shall promptly install any safeguard or take any corrective measure indicated or found advisable."
2. State: OAR 437-001-0765(6) (g) Safety Committee/Accident Investigation:
   "The safety Committee shall establish procedures for investigating all safety-related incidents including injury, illness, and deaths. This rule shall not be construed to require the committee to conduct the investigations."
3. State: OAR 437-001-0052 Reporting an Occupational Fatality, Catastrophe, or Accident:
   We are responsible to notify OR-OSHA within 8 hours of a workplace fatality or catastrophe, and within 24 hours of an injury resulting in overnight or longer hospital admission.

Definitions

Accident - An unplanned event that results in personal injury or property damage.

Catastrophe - An accident in which any employee is fatally injured or three or more employees are admitted to a hospital or equivalent medical facility.

First Aid - Any one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such treatment and observation are considered first aid even though provided by a physician or registered professional person.

Lost Workday Case - An injury which involves days away from work or days of restricted work activity, or both.

Medical Treatment - Includes treatment of injuries administered by physicians, registered professional persons, or lay persons (i.e., non medical personnel). Medical treatment does not include first aid treatment (see above) even though provided by a physician or registered professional personnel.

Near-Miss - Any unplanned event which could potentially have resulted in personal injury or property damage but based upon "good fortune" did not.

Occupational Illness - Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It

includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

Recordable Case - All work-related deaths, and illnesses, and those work-related injuries which result in: loss of consciousness, restriction of work motion, transfer to another job, or require medical treatment beyond first aid.

General Responsibilities

1. Management: It is the direct responsibility of department heads or managers to ensure that all reported injuries, illnesses, near-misses, or reports of property damage, are promptly investigated as to cause and that any necessary corrective measures are implemented so as to reduce the likelihood of recurrence.
2. Immediate Supervisor: It is the responsibility of the supervisor or group leader to promptly perform the initial accident investigation of all reported injuries, illnesses, near misses, or reports of property damage, and arrive at recommendations to reduce recurrence.
3. Management Team: The Management Team shall be involved in the investigation of all seriously disabling claims, fatalities, and catastrophes.
4. Safety Committee: The Safety Committee will review all written accident investigation reports, and associated recommendations, and provide additional insight as to methods which might assist in reducing the incidence of recurrence.
5. Employee: The employees are responsible for immediately reporting to their supervisor any injury, illness, near-miss, or any accident involving property damage, sustained in the scope of their employment.

Accident Investigation Procedure

1. **Accident Reporting Personal Injury** - If an employee is injured, suffers an occupational illness, or near-miss, the following reporting procedures shall be carried out:
    a. The incident and/or condition will be immediately reported to the worker's supervisor who will complete the Accident/Injury Report, regardless of the severity of the injury.
    b. All injuries regardless of how insignificant they initially may appear must be immediately reported to the supervisor. An Accident/Injury Report must be completed by the end of the shift.
        i. The supervisor must review the Accident/Injury Report Form submitted by the employee and sign where indicated. The supervisor must assure immediate transmittal of the report to the Administration, and the Safety Committee.
        ii. The supervisor and employee must complete the Accident/Injury Report. If the injury is of a minor nature and only needs a brief doctor's office visit, PRIOR to obtaining medical attention, the report must be on file in the Administration's office and the employee is to notify the doctor's office that our entity should be billed for the office visit.
    c. Any time that the work-related condition should necessitate the services of a medical provider, the employee is further required to complete a Workers' Compensation Claim Form 801. The 801 must be filed with Administration within five days of the accident.
        i. The Administration or designee is required to report all work place fatalities and catastrophes to OR-OSHA within eight hours of knowledge at OR-OSHA's central office.

1. OR-OSHA requires that employers and their representatives not disturb the scene of a fatality or catastrophe other than to conduct the rescue of an injured person until authorized by the OR-OSHA Manager (or designee), or directed by a recognized law enforcement agency to do so.
2. Further, all employee injuries resulting in admission to a hospital also require notice to OR-OSHA within 24 hours of knowledge. Such notice will again be accomplished by the Administration's office.

Note: The purpose of such reporting is to provide OR-OSHA the opportunity to conduct an independent investigation, should they so choose. This form of reporting applies only to injuries requiring immediate hospitalization and not conditions that result in hospitalization weeks or months later.

2. **Accident Reporting: Vehicular Accidents** - In the event that a vehicle is involved in a traffic accident, the driver shall immediately call 9-911 and notify his/her supervisor.
    a. No vehicle shall be moved from the scene until law enforcement arrives or photographs are taken, unless a greater hazard would be created by failure to remove the vehicle(s) from the scene. The following procedures apply:
    b. All drivers should notify the Local Law Enforcement Agency (9-911) of any of the following accidents:
        i. Collision with any object or person involving an entity owned or leased vehicle, or other vehicles being used on official business.
        ii. Any event where damage results to a vehicle being operated by an employee while on business, whether being driven or parked.
        iii. Any involvement in an accident where damage claims may be made against our organization, even though your vehicle had no contact with other objects or vehicle.
        iv. Damage or loss to one of our owned or leased vehicle or contents due to a fire or theft.
    c. In all instances where the damage is determined to be in excess of $1000 or there is an injury accident, the driver shall complete a "State of Oregon Vehicle Accident Report".

3. Investigation

    a. Upon notice of an accident, injury, illness, near-miss, or on the job physical complaint the supervisor will ensure that the accident investigation procedure is implemented in a timely fashion. (Use the Accident/Injury Report Form.)
    b. The supervisor shall first establish the nature of the employee's report since any corresponding investigation will in part be controlled by such determination. The nature of the problem being reported could include:
        i. In those instances in which the worker complains of either non-work related, or of unknown origin, the supervisor will complete those appropriate portions of the investigation report form.
        ii. The supervisor will accurately record the employee's explanation as to any off-the-job exposure or event which may have contributed to the problem.
            1. This report form will be completed prior to the conclusion of the workday and provided to Administration for review and processing.

        iii. In those instances in which the employee is alleging a work relationship, the supervisor will complete and submit the entire investigation form, in conjunction with their recommendations to the Safety Committee.

1. In those instances in which the reported incident results in either first aid, or medical only treatment, Administration will ascertain if there is sufficient information present in the supervisor's report to determine the source of the problem. If appropriate, recommendations for any necessary corrective action will be identified and reported back to the supervisor.
    a. After the report is adequately completed, the supervisor's report will be attached to the Accident/Injury Report Form and submitted to the Safety Committee.
    b. A copy of the investigation form will be maintained in the supervisor's investigation file.
2. The supervisor will further ensure that the necessary corrective action is taken through the completion of a work order, purchase order, etc., where appropriate.
3. Alternatively, the supervisor may, at their discretion, request a follow-up investigation due to shortcomings associated with the original effort, complexity of the issues, recurrent nature of the problem, etc. Such a follow up investigation shall be completed by the supervisor or Safety Committee.
4. In those instances in which the Safety Committee conducts an investigation, the results will be submitted to the supervisor in a written narrative format, inclusive of all factual information gathered and specific recommendations for remedy in a timely fashion.

iv. All fatalities, catastrophes, cases of serious disabling injury, multiple injury victims, or any instance in which the circumstances surrounding the event are suggestive of potential entity involvement, the supervisor will provide timely notice to the Safety Committee who will become involved if appropriate, in the investigation process.

v. In any instance where the supervisor deems appropriate, they will encourage the involvement by at least one member of the Safety Committee in the accident investigation process.

Accident Investigation Reporting Form

1. The following process will be followed when reporting injury accidents and occupational diseases.
2. The supervisor of the injured employee will fill out the Accident/Injury Report Form and the Accident Investigation Form on the back. **Please report all occupational accidents, illnesses and near misses. (ADMINISTRATION MUST BE NOTIFIED IMMEDIATELY IF THE INJURY/ILLNESS IS SERIOUS OR A DEATH OCCURS).**
3. After signing the form to verify its completion, the supervisor will send the form to Administration.
4. The supervisor must turn in the completed Accident/Injury Report Form to Administration. The supervisor will check to make sure all forms are complete and do further investigation if needed.

(If a SERIOUS INJURY, ILLNESS or FATALITY occurs the Department Head must do a complete investigation and if possible, be accompanied by a member of the Safety Committee or

Management Investigation Team. The Department manager should attach a "Scene Diagram Sheet", Photographs, investigation report and witness statements to the Accident Report Form.) Notify OSHA with 24 hours of knowledge of a catastrophic or fatal accident.

Posting Requirements

All required posting will be on the employee bulletin boards at each of the Department offices.

1. Injury and Illness Summary Report on the OSHA 300A are posted from February 1st to April 30th.
2. Any citation or variance will be posted for at least 60 days or until they become a final order or are corrected.
3. The Oregon Safe Employment Poster shall be continuously posted.

NOTICE:

This manual is not intended to outline every specific rule requirement that may apply to our operations, but is to establish the basic safety rules and procedures. For a specific rule question, please refer to the various Safety Regulations

PART 2

CHAPTER 1. CITY OF NEWPORT SAFETY COMMITTEE

Purpose

The applicable legal standard for the City of Newport Safety Committee is Oregon Administrative Rule 437-001-0765, "The purpose of Safety Committees and safety meetings is to bring workers and management together in a non-adversarial, cooperative effort to promote safety and health. Safety Committees and safety meetings will result in continuous improvement to City safety and health programs."

The goal of the Safety Committee to evaluate safety and health issues to assist in protecting the safety and health of all City employees. The Safety Committee will communicate fundamental safety concepts that will help prevent injury and loss due to recognizable hazards.

Definitions

Management: City Manager, Department Head, or Supervisor.
Employee Representative: An individual selected by and from employees, who serves as a spokesperson for their City department
Safety Committee: Management and staff representatives with an interest in the general promotion of safety and health responsibilities

A. Management
   Management is responsible for preventing accidents and injuries. Management provides direction and full support of all safety procedures, job training, and hazard elimination practices.
B. Supervisors
   Supervisors are directly responsible for job training of their workers. Job training includes proper procedures, work practices, and safe methods to carry out jobs. Supervisors must enforce safety rules and take immediate corrective action to eliminate hazardous conditions.
C. Safety Committee
   a. The Safety Committee's responsibility is to advise management on safety and health issues and safe work practices, and to provide leadership in protecting the safety and health of all employees. The Safety Committee is the primary forum for communication and exchange of information on all safety issues.
   b. The Safety Committee examines problems and obstacles of loss prevention; identifies hazards and suggests corrective action identifies employee safety training needs; and develops accident review procedures.
      i. The Safety Committee maintains a system that allows employees to report hazards, and to make safety- and health-related suggestions.
   c. All City personnel are expected to cooperate in all aspects regarding safety and health issues. Fundamental safety concepts include, but are not limited to, the following:
   d. Accidents must be reported immediately to the supervisor
      i. Required personal protective equipment will be worn by all employees, without exception.

ii. Machines or equipment without adequate guarding, or in questionable condition, will not be used. Hazardous equipment must be immediately reported to the supervisor.
iii. Hazardous conditions, or other safety concerns, must be reported immediately to the supervisor.

D. The following obligations have been assigned to the Safety Committee in compliance with Oregon Administrative Rule 437-001-0765: Evaluate management's accountability system for safety and health, recommend improvements. An accountability system to control safety and health hazards includes, but is not limited to, incentives, discipline, and evaluation of success.
E. The Safety Committee does not make policy it is responsible for recommendations to Management on employee safety and health issues. The supervisor will consider each recommendation, and at the next scheduled Safety Committee meeting, notify the members of what action will be taken, why, and when.
F. Committee Membership
    a. The Committee shall be composed of an equal number of employer-selected members and employee-elected or volunteer members. The Committee may agree to accept more employee-elected or volunteer members than employer selected members.
    b. Safety Committee membership must represent the various City departments and major activities.
    c. Management representatives should have authority to make decisions regarding unsafe acts and hazards identified by committee members.
    d. Safety Committee participation will be used to provide positive reinforcement to those who take the extra effort to make our facilities a safe environment, thus making committee participation a valued activity.
    e. Employees shall be encouraged to submit safety recommendations, concerns, etc. to their Safety Committee representative.
G. Basic
    a. The Safety Committee will meet monthly during regular work hours. The committee shall hold regular meetings at least once a month, except in those months in which the mandatory quarterly safety inspections are made. Quarterly inspections can be substituted for the monthly meeting in the month the inspection is made.
    b. The committee will have a chairperson elected by the committee members, and this person will serve as the chairperson for one year.
    c. Employee representatives attending Safety Committee meetings required by OAR 437-001-0765 or participating in Safety Committee training or instruction shall be compensated at their regular rate of pay.
    d. Employee representatives will serve a continuous term of at least one (1) year.
    e. Safety Committee members will receive training in Safety Committee operations, the principles of accident/incident investigations for use in evaluating those events, and hazard identification.
        i. A written record of each meeting will be documented, made available to all employees, and kept for three years that includes the following:
            1. Hazards related to tools, equipment, work environment and unsafe work practices identified and discussed during the meeting.
            2. The date of the meeting.
            3. The names of attending employees

4. Minutes shall be made retained for a period of three years for inspection by OR-OSHA. The records will be kept in the Administration files.

H. Inspections
   a. The inspection team shall include management as well as an employee representative.
   b. Inspections will be completed on a quarterly basis for all primary fixed locations.

I. Accident Review

   Accident reviews by management will be discussed as part of the monthly safety meetings. The committee will evaluate all injuries/illnesses and "near-miss" accidents reported to the supervisor and/or committee and any related investigations completed.

   If the committee feels additional information is required, representatives may view the accident site to ensure that the actual cause of the event has been identified. The committee may make recommendations to the supervisor to prevent recurrence of such events.

   The committee Chair will submit an annual report that summarizes the committee's activities.

J. Safety Committee Training
   a. Members of the Safety Committee shall receive OR-OSHA-required periodic training in the following areas:
      i. The function and duties of a Safety Committee.
      ii. Hazard identification in the work place.
      iii. The principles regarding effective accident review.

CHAPTER 2. EMERGENCY ACTION, FIRE PREVENTION PLAN, AND FIRST AID

Policy

We have adopted this Emergency Action and Fire Prevention Plan to assist in preventing an emergency from occurring and if one should occur, to minimize the impact on our staff, our property and equipment and the public using our facilities. This plan is supported by maps that are posted in each of our buildings. Our main responder in most emergencies is the local Fire Department or Newport Police Department other local Emergency

Applicable Legal Standards

The following OR-OSHA standards apply to emergency and fire prevention plans and actions:

- State: OAR 437-02-1910.38 Emergency Action & Fire Prevention Plans
- State: OAR 437-02-1910.35-.37 Means of Egress - Exiting
- State: OAR 437-02-1910.0157 Fire Protection
- State: OAR 437-02-1910.0120 Hazardous Materials Emergency Response
- State: OAR 437-02-0161 First Aid & Emergency Medical Response

Definitions

The following are OR-OSHA definitions that are key to understanding the legal requirements for this plan.
Emergency Action Plan - A plan for a workplace describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

Emergency Escape Route - The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

Exit Access - A means of egress which leads to an entrance or exit.

Exit - That portion of means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in the rules to provide a protected way of travel to the exit.

Fire Inspection - A visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of fire.

Fire Protection System - This includes fire extinguishers and automatic fire sprinkler systems.

Incipient Stage Fire - A fire which is in the initial or beginning stage and can be controlled or extinguished by portable fire extinguishers without the need for protective clothing or breathing apparatus.

Maintenance - The performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, and devices.

1. Management: Management is responsible to ensure that all employees are trained and informed about this Emergency Action Plan. Employees will be updated when the plan

changes. Management will ensure that the proper safeguards and fire protection systems are maintained.

2. Supervisor: The supervisor plays a critical role in ensuring that all appropriate outside responders are notified. The supervisor will implement the call outs for emergency notification and to outside responders if employees have not already made the 9-911 call.
3. Emergency Coordinator: The Emergency Coordinator is appointed by the supervisor. The Emergency Coordinator's responsibilities include:
    a. Assessing the situation and determining if the Emergency Action Plan should be implemented.
    b. Directing the evacuation of personnel.
    c. Making sure that Management has been notified to ensure that appropriate outside emergency services have been notified.
    d. Directing the shutdown of operations when necessary.
    e. Accounting for personnel involved in the incident including outside contractors and visitors to our facilities.

    Note: The coordinators are not to enter a situation with uncontrolled emergency. These employees will be trained as to the limitation of their role.
4. Fire Protection System Maintenance: This individual ensures that all the fire protection systems are maintained and tested as required by OR-OSHA regulations and by the Insurance representatives.
5. All Employees are to follow this plan for preventing emergencies and conform to the plan's evacuation and emergency notification as outlined in the plan. All employees are encouraged to bring up any questions or suggestion on how to improve the plan with their supervisor.

Potential Emergencies

The following are the main type of potential emergencies at our facilities:

- Fire
- Chemical Spills or Releases
- Medical Emergency due to an accident or illness
- Bomb Threat
- Violence
- Terrorism that would be covered by Homeland Security requirements
- Environmental Emergency: Wind storm, Flood, Earthquake, Tsunami

Overall Policy

1. All losses including fire, explosion, windstorm, flood damage, electrical, etc. shall be reported to the supervisors or managers. Report any incident which results in the operation of fire extinguishers even though there may not be an actual loss sustained.
2. Selected employees may receive fire extinguisher training and the training will be updated once a year.

General Procedures - Fire and Other Significant Chemical Releases

1. Emergency escapes procedures and emergency escape route assignments.
   The types of immediate actions are based on nature of the emergency.
    a. For incipient fires, immediately implement fire control action and clear all non-essential personnel and public from the area.

b. For chemical spills, our responders will initiate a defensive action to contain the spill from migrating. Depending on the nature of the chemical and extent of the spill the immediate employees may clean-up the spill or call in the Fire Department.
c. No employee is to perform hazardous chemical clean-up duties that he/she is not trained in nor has the appropriate personal protective equipment.
d. Use the nearest exit which will take personnel away from the fire.
e. For an IMMEDIATE TOTAL SITE EMERGENCY EVACUATION employees and public are to all leave by using the nearest exit doors and assemble in the areas shown on building evacuation maps that are posted at the main exits on each floor of the buildings.
f. For a NON-IMMEDIATE CONTROLLED EVACUATION, (e.g. advance notice of a flood condition) employees and public will be given instructions by the supervisor on how to proceed.
g. For LOCALIZED EVACUATIONS (only one BUILDING) the notification message will be given and everyone will move into the pre planned sites as described next.
h. Report to the Emergency Coordinator and wait for further instructions during emergency evacuation.
i. Maps outlining places of refuge will be posted in each building at the exit doors.

2. Procedures to be followed by employees who remain to perform critical operations before they evacuate.
    a. Supervisors and trained personnel are responsible to ensure that critical operations are shutdown before they evacuate if it can be done without harm to the individual. Those operations could include the following depending on the emergency:
        i. Isolating power to equipment which is on fire or related to the emergency. Employees expected to terminate power in emergency affected areas will be trained in how to shut off electrical power especially during a fire or flood.
        ii. If there is a motor fire, the motor should be turned off. NEVER SPRAY WATER ON LIVE ELECTRICAL CONNECTIONS OR MOTORS. (ELECTRICAL SHOCK HAZARD)
3. Procedures to account for all employees after emergency evacuation
    a. The Emergency Coordinator and/or supervisors will account for the employees or public in their work areas. If a person is missing the information will be communicated to the outside emergency responders. Our employees are not to re-enter any facility that has been evacuated due to an emergency as we do not have the proper equipment or training.
    b. The Emergency Coordinators will designate someone to direct the fire department to the fire and show them where the water hook-up is located.
    c. No one is to leave the evacuation area site unless instructed by the person in charge.
4. The preferred means of reporting fires and other emergencies:
    CALLING 9-911 WILL GET IMMEDIATE EMERGENCY SERVICES.
5. Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan:
    a. Manager/Administrator
    b. Supervisor

The following procedures are additional policy issues that relate directly to fire protection and fire response actions.

The overall fire protection system is managed by the supervisor who hires a fire extinguisher contractor who performs the following activities:

1. Fire extinguishers are checked monthly and are tested based on the required frequency. Fire extinguishers are to be:
    a. Accessible, fully charged and in operable condition at all times.
    b. Visually inspected on a monthly basis to ensure they are fully charged and in their designated locations. The locations will be clearly marked.
    c. Full annual maintenance check on each extinguisher that includes:
        i. Inspecting and/or testing external and internal parts, checking the quantity and quality of the contents and assuring operational capability.
        ii. A qualified person must do the maintenance check. Persons deemed qualified by the Oregon Office of State Fire Marshal or local fire authorities will do the annual maintenance checks.
        iii. Keep a record of the maintenance check until a new check record replaces it. This record will be available to OR-OSHA on request.
        iv. Replacement extinguishers will be provided or some other method of coverage will be used for the affected area while extinguishers are out of service for the maintenance check.
        v. The inspection date and the initials of the person performing this inspection will be recorded on a tag attached to the extinguisher.
    d. Any extinguisher that is not fully operable will be removed and replaced.
    e. Internal examinations of fire extinguishers will be done at intervals not longer than the requirements set in Table 2 of the OR-OSHA Standard 437-002-0187 Portable Fire Extinguishers or when the extinguished shows corrosion or physical damage. Stored pressure dry chemical extinguishers require a 12-year hydrostatic test and subject to maintenance every 6 years. Most other types of fire extinguishers are hydro tested every 5 years.
    f. Nonrechargeable extinguishers are good for 12 years from the date of manufacture and then will be taken out of service.
    g. Proper maintenance of equipment and systems installed on heat-producing equipment to prevent accidental ignition of combustible materials in accordance with established procedures.
2. Selection of Portable Fire Extinguishers: Portable extinguishers have been selected on the basis of the classes of anticipated fires as follows:
    a. Class A Fire: Ordinary combustible materials (paper, wood, cloth, some rubber and plastics).
    b. Class B Fire: Flammable or combustible liquids and gases, greases and similar materials and some rubber and plastics.
    c. Class C Fire: Energized electrical equipment where safety of the employee requires use of electrically non-conductive extinguishing media such as carbon dioxide or dry chemical.
    Note: Multipurpose, dry chemical extinguishers designated ABC are approved for use on Class A, B, and C fires.

d. Class D Fire: Combustible metals

3. Distribution of Portable Fire Extinguishers: The proper distribution of portable fire extinguishers depends on three criteria:
    a. How far an employee must travel to the extinguisher.
    b. How large an area is to be protected per extinguisher.
    c. How the hazard has been classed (A, B, C or D).
    d. Our policy on the distribution and sizes of portable fire extinguishers is:
        i. Distribution: extinguishers should be located along normal paths of travel.
        ii. SEE POSTED MAPS OUTLINING LOCATIONS.
4. All fire exits will be visibly marked with signs and kept accessible at all times.
    a. All fire exits will be unlocked from the inside to allow for quick exiting.
    b. All non-exits which could be mistaken for an exit will be marked with a sign stating "Not an Exit" to reduce confusion should an evacuation be needed.
5. Welding Safety System:
   Maintenance personnel are responsible to conduct welding in a safe manner and ensure that combustibles in the welding area are removed or protected. The staff is required to:
    a. Assign a Fire Watch for hazardous areas due to wood dust, combustible materials or debris for a minimum of 10 minutes, and longer if worker believes it to be necessary.
    b. Wet area down prior to welding with hoses if the structure or area contains combustible materials.
    c. Keep a fire hose or extinguisher in the immediate area.

   Outside contractors are expected to follow Fire Watch procedures. The Project Manager in charge of any outside contractor operations will ensure that the contractor's are informed and equipped to handle necessary Fire Watch and site preparation.

First Aid for Medical Emergencies

First-aid trained personnel are not required at every place of employment. The 2009 rules require an employer to ensure that emergency medical services are readily available for treatment of injured employees. Our Emergency Medical Plan must identify either the use of a qualified first-aid person on site, or use of an outside service. If an outside service is considered, the plan must include the identity of the service, and the methods used to access it. Employers must be able to identify the location of the nearest emergency response provider and the expected response time of that system.

If local outside services are not available, or response times are not considered satisfactory, a qualified first-aid person(s) must be available.

1. Emergency Number Posting
   The emergency telephone number – 9-911 - shall be posted next to every plant phone. The names of first-aid/CPR trained personnel are to be posted on the lunch room or other bulletin boards or on the first-aid kits.
2. First-Aid Supplies
   First-aid supplies shall be in proximity to all employees. The supplies will be located in labeled safety supply/first-aid cabinets at the following areas in our facilities:
    - Designated places(s) for each Department
    - Additional supplies are kept at each fire station
    - Fire Department staff have access to a Disaster Medical Supply Cache
    - Every Police Vehicle and Fire Apparatus & designated Public Works vehicle

The specific first-aid items that are required as a minimum to be available in each first-aid kit include:

a. gauze pads at least 3" x 3"
b. large gauze pads which can be folded to a size of 8" x 10"
c. box of adhesive bandages
d. triangular bandages
e. package roller bandage at least 2" wide
f. Wound cleaning agent
g. Scissors
h. 1 blanket or equivalent
i. Disposable medical gloves and CPR face piece for infection control
j. Disinfectant hand cleaner
k. Disinfectant soap
l. Eye wash solutions

The first-aid supplies will be monitored by the department supervisors or Safety Committee.

3. General Equipment Available for Bloodborne Pathogens.
   The supervisor will ensure that employees required to respond or provide CPR and first aid are trained and provided appropriate personal protective equipment. This includes:
   a. Disposable medical gloves
   b. Disposable safety goggles
   c. Disposable micro shield with one-way valves for use in giving CPR
4. Sharps containers shall be located in the appropriate locations within our facilities. Sharps containers shall be properly disposed of immediately when they are full and will be replaced with new containers immediately.

BASIC EMPLOYEE EMERGENCY ACTION RESPONSE

Emergency escape procedures and emergency escape route assignments including but not limited to maps outlining exits, location of fire emergency pull down stations and fire extinguishers will be posted in work areas.

1. During emergency evacuations employees will:
   a. Use the nearest exit which will take you away from the fire or a chemical leak or release.
   b. Move to the refuge area outlined on the evacuation maps for your work area in the event of a fire/chemical or other emergencies.
   c. In a chemical gas emergency move up wind of the leak.
   d. Report to the Emergency Coordinator and wait for further instructions.
   e. No employee is to leave the grounds until cleared by the Emergency Coordinator.
2. Upon discovering a fire that is not readily controllable with the materials and equipment at hand the employee must call 9-911.
3. Upon discovering an incipient (small) fire a trained employee can use the fire extinguisher if he or she can do so safely. And notify the supervisor.
   The procedure is:
   a. Use fire extinguisher and alert fellow employees.
   b. Immediately notify the Safety Coordinators through the call list.
   c. Provide the following information:
      i. Location of emergency - specific as possible
      ii. Type and severity of the fire, chemical release, medical emergency or other

iii. If electrical equipment is threatened
iv. Actions currently being taken, if any.

4. Upon discovering a chemical spill:
    a. If emergency call 9-911.
    b. The fire department the only currently trained personnel to deal with containment and control of chemical spills.
    c. If significant release, immediately evacuate the area.
5. Medical Emergency
    a. Immediately notify the designated first aid personnel (supervisors) through the call list. Call 9-911 for emergency medical treatment.
    b. Emergency Coordinators are appointed by the supervisor.
    c. Further information or explanation of duties under the plan or copy of the plan, contact your supervisor.

FIRE & MEDICAL EMERGENCIES - 9-911
CHEMICAL SPILL OR CONFINED SPACE RESCUE - 9-911

Chapter 3:BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN

Purpose

This Bloodborne Pathogen Exposure Control Plan covers all of our staff with potential blood or body fluid exposure. The Plan Coordinator is the supervisor, assigned to see that this plan is followed, reviewed, and updated annually.

The training required by the Bloodborne Pathogen Plan will be arranged or coordinated through your supervisor. The training will occur at the time of initial assignment and annually thereafter for all covered staff.

This Bloodborne Pathogen program describes the essential elements needed to protect our employees who might, in the expected course of carrying out their every day staff responsibilities, come in contact with human blood or body fluids.

It is our policy that all our employees will be trained in our Bloodborne Pathogen Program. There will be an annual refresher-training program.

This Exposure Control Plan includes the following topics:

1. Universal Precautions (Engineering Control Methods)
2. Work Practices - Hand washing techniques
3. Personal Protective Equipment - Selection & Limitations
4. Housekeeping & Methods of Decontamination
5. Infective Waste Handling/Disposal Procedures
6. Hepatitis B Virus Vaccinations - Medical Surveillance
7. Hepatitis C Virus
8. Post Exposure Evaluation & Follow-up
9. Recordkeeping
10. Employee Training

Exposure Determination

1. The OR-OSHA Bloodborne Pathogen standard applies to all employees whose routine job duties may result in potential exposure to human blood or other potentially infectious body fluids (OPIMs). OR-OSHA defines occupational exposure as meaning reasonably anticipated (reasonably expected) skin, eye, mucous membrane, or piercing of the skin contact with blood or other potentially infectious materials that may result from the performance of an employee's routine job duties.
2. These employees are could be Police, Fire or Public Works Department employees. This decision is based on the exposure determination as to which employees may incur occupational exposure to blood or other potentially infectious material. This determination was made without regard to the use of personal protective equipment.
3. Note: Employees who perform first aid as a “Good Samaritan Act” and not as an assigned responsibility will be provided training, and proper first aid kits are available in designated areas. These employees, however, will not be part of the pre-exposure Hepatitis B vaccinations. Any workplace exposure incident will be treated as listed in this plan’s medical response section.

4. General "self-help" first aid kits and supplies are found in various locations in most buildings and vehicles. These kits provide basic first aid supplies but are not indicated for use by designated first aid provider. Those designated first aid providers will have specially assigned first aid kits, which include basic barrier protection.

Applicable Legal Standard

- Federal: 29 CFR 1910.1030
- State: OR-OSHA Bloodborne Pathogens Standard OAR 437 Division 2

Definitions

Bloodborne Pathogens - Any pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Hepatitis B and C VIRUS (HBV and HCV) - Diseases spread through sexual contact, blood transfusions, contaminated needles, and contact with body fluids on non intact skin and mucous membranes. (Viral infection of the liver.)

Human Immunodeficiency Virus (HIV) - The virus that can cause Acquired Immune Deficiency Syndrome (AIDS) and is spread in the same manner as HBV or HCV.

Exposure Incident - A specific eye, mouth, other mucous membrane, non-intact skin, or skin piercing contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Engineering Controls - Controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

Needleless systems - A device that does not use needles for:

a. The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established.
b. The administration of medication or fluids
c. Any other procedure involving the potential for occupational exposure to Bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Universal Precautions - A set of protocols that are recommended by the Center for Disease Control and Prevention and now required by OR-OSHA to prevent skin and mucous membrane exposure when potential contact with blood or body fluids are anticipated.

Overall Responsibilities

The following exposure control plan has been developed in compliance with the OR-OSHA standard. Our plan is designed to minimize, or eliminate, our employees' exposure to Bloodborne pathogens.

1. A copy of this plan is in the Safety Manual and will be on file in the supervisor's office.
2. All new employees will read this plan at the time of their initial safety orientation and may have a copy if he/she wishes.

3. All employees will use “universal precautions” to prevent contact with blood and other potentially infectious body fluids. Where it is difficult to differentiate between body fluid types, all such body fluids shall be considered potentially infectious materials.
4. The supervisor will be responsible to:

    a. Coordinate and provide resources to ensure that employee training is provided and documented.
    b. Maintain a list of affected employees.
    c. Coordinate and provide resources to ensure Hepatitis B vaccinations are offered and records are maintained.
    d. Coordinate with the supervisor exposure incident investigations and appropriate medical treatment and follow-up for hepatitis and HIV sero-conversion. Confidential records will be maintained by the Human Resource Department as confidential.
    e. The supervisors will ensure that appropriate equipment is provided to employees to protect against contact with blood or other infectious body fluids, which includes:
        i. Personal protective equipment required for protecting employee from blood or other infectious body fluids when performing their routine duties.
        ii. Placement of first aid kits, including infection control materials.
        iii. Appropriate personal protective equipment for use during accident investigation when blood may be present,

Methods of Compliance

1. Universal Precautions: Any employee providing help to anyone who is injured or has blood or body fluids on them must use Universal Precautions. Universal Precautions are a set of protocols that are recommended by the Center for Disease Control and Prevention and now required by OR-OSHA to prevent skin and mucous membrane exposure when potential contact with blood or body fluids is anticipated.

    The protocols are based on three basic premises:
    - Treat all blood or body fluids as potentially infectious.
    - Protective barriers must be used which reduces the risk of exposure.
    - The barriers only supplement existing infection control measures such as hand washing.

    Universal Precautions specifically include:
    - Gloves must be worn when touching blood or body fluids or non-intact skin.
    - Gloves must also be worn when handling items or surfaces obviously soiled with blood or body fluids.
    - Bandage any cut, wound or break in the skin with watertight bandages to preclude contact with blood or body fluids.
    - Wash hands thoroughly with soap and water for at least 10-20 seconds after contact with blood or body fluid or handling contaminated articles. This procedure should be done even after wearing gloves.
    - Employees shall use a mouth guard (Microshield) when performing CPR.

    The following procedures need to be used when washing hands/body as part of our Universal Precaution measures:

a. Wash hands after removal of gloves or whenever you had contact with body fluids. If water is not immediately available then alcohol or antiseptic towelettes may be used.
b. Remove gloves after first washing with soap and water. Washing only helps reduce the risk of contacting blood/body fluids when removing the gloves. (Disposable gloves are not being washed for re-use.)
c. Pull glove from skin using outer top part of glove so the other glove does not contact the skin. To pull off the glove with the other ungloved hand place your fingers at the top interior of the glove and pull off the glove.
d. Follow same procedures for non-disposable gloves but ensure thorough decontamination prior to removal. Allow the gloves to dry and store gloves so that they do not degrade or become contaminated.
e. Use soap and warm water, hot water removes oil from the skin. The hands and forearms should be washed.
f. Rub your hands vigorously: friction by rotary motion and rinsing under running water aids in the mechanical removal of bacteria.
g. Wash all surfaces, including the back of hands, wrists, between fingers, under fingernails. Your hands should be washed well for 10 to 20 seconds.
h. Rinse well.
i. Dry hands with paper towel.
j. Turn off the water using a paper towel instead of bare hands.
k. Full showering should be done as soon as possible if body contamination occurred. Note: Frequent hand washing destroys the natural oils and causes drying and cracking of the skin. Keeping the skin intact helps to prevent the invasion of bacteria and possible secondary infections. Hand lotion should be applied.
l. If you have open cuts or wounds, you should be wearing waterproof bandages.

2. Engineering and Work Practice Controls will be used to eliminate or minimize employee exposures. Where occupational exposure remains after institution of these controls, personal protective equipment will also be used.

   The supervisor will identify, evaluate, and select engineering and work practice controls including safer medical devices on an annual basis. This evaluation will involve non-managerial front-line employees who are responsible for direct patient care. An evaluation will be conducted at each facility that involves direct patient care.

   After a device is evaluated and selected, management will make a decision on implementing that device.

   If a device is not purchased because of employee or employer concerns, those concerns will be documented by the supervisor. However, if the employer does not purchase a device that had employee support, the employer must also document the employee support as well as the justification for not purchasing that device.

   If a device is purchased without the consent of the employees who evaluated it, the employer must document the employees' concerns as well as the employers' justification for purchasing that device.

   All documentation required will be kept as part of this written Exposure Control Plan.

Personal Protective Equipment

General Equipment Available

The supervisor or your supervisor will ensure that employees are provided appropriate personal protective equipment. This includes:

1. FIRST AID KITS designated for authorized first aid providers shall include at least:
    a. Two pairs of disposable latex gloves
    b. Disposable safety goggles
    c. Disposable MicroShield with one-way valves for use in giving CPR
2. Sharps containers shall be located in the appropriate locations within our facilities. Sharps containers shall be discarded immediately when they are full and will be replaced with new containers immediately.
3. The sharps containers are to be maintained in upright position, closeable, puncture resistant, leak proof on the sides and bottom, and clearly labeled “Biohazard” or red in color.
4. When picking-up sharps (such as hypodermic needles) and broken contaminated glass, employees need to wear latex gloves and use tongs, rather than their fingers. Contaminated needles must not be broken, bent, recapped, or removed.

Limitations of Personal Protective Equipment

1. Gloves: Gloves can be torn or punctured. Gloves should be changed after contact. Disposable gloves should not be washed or disinfected for reuse. They also should not be used when visibly soiled, punctured, or when their ability to function as a barrier is compromised. Hands should be washed as soon as possible after removing gloves. If water is not available then disposable hand washing wipes should be used.
2. Face / Eye Protection: These items also need to be clean and maintained in good repair. They should be discarded if they do not function as indicated by the manufacturer's use and maintenance documentation.

Location of Personal Protective Equipment

Proper PPE is located in the first aid kits that are in each department.

Other locations as listed:

PPE needs to be maintained cleaned and kept in sanitary condition.

Housekeeping Requirements

1. Hepatitis virus can survive for at least a week in a dried state at room temperature on work surfaces. HIV survival is less: 24 to 48 hours. As a result, it is important to ensure proper cleaning of all materials or surfaces contaminated with blood or body fluids.
2. Cleaning up blood or body fluids shall be done as soon as possible. Basic cleaning products used by our staff that is effective environmental disinfectants. The chemical products use instructions need to be followed for proper dilution and application methods.
3. If the commercial disinfectants are not used fresh bleach solution can be made and is effective. 500 ppm (parts per million) free available chlorine (a 1:100 dilution of common

household bleach - approximately 1/4 cup bleach per gallon of tap water) is effective. The bleach solution must be made fresh each day.

4. Cleaning and Disposing of PPE.
5. Disposable latex or vinyl gloves or clothes should be disposed of in the regular trash after use unless soaked with blood or OPIM.
6. Goggles (that are not disposable) should be cleaned with soap and water and then wiped down with alcohol or other germicides if contaminated with blood or OPIM.
7. Puncture resistant gloves that become soiled will need to be disposed of, unless they are coated with a plastic material that is cleanable or are of washable leather.
8. Employee will ensure that all garments penetrated by blood or body fluids are removed immediately or as soon as possible.
9. Contaminated laundry shall be placed and transported in bags that are labeled or color-coded. Whenever the laundry is wet and may soak through or leak from the container, it shall be placed and transported in leak proof red labeled bags.
10. Costs for laundering and cleaning of employee clothing or uniforms contaminated in the course of work performance will be borne by our organization.

Biohazard Waste Handling/Disposal Procedures

1. A biohazard waste which requires special handling and disposal is defined as "any liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other infectious materials and are capable of releasing these materials during handling; shall be disposed of immediately in the proper containers."
2. The biohazard containers or bags must be able to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping.
3. Blood and other body fluids can be disposed of down the sanitary sewer in Oregon.
4. Though we do not expect to encounter any syringes (sharps), if they are found the following procedure must be followed. Sharps, including blood contaminated utility knives or broken items that are found shall be disposed of in a closeable, puncture resistant, disposable container that is labeled and color coded - red.
5. Procedures for picking-up sharps:
    a. Have sharps container ready.
    b. Use latex gloves or vinyl gloves.
    c. Use mechanical equipment (pliers, shovels, or dustpans) to pick up contaminated utility knives or scissors.
    d. Dispose of needle in sharps container.
6. When transporting containers of contaminated sharps and other regulated wastes from the use area, the containers shall be closed to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.
7. The method of removing “contaminated waste”* containers will include:
    a. Refer to definition of Biohazard waste, listed above.
    b. Sealing the sharp containers and any Biohazard bags (red bags) containing infectious waste materials.
    c. The containers or bags will be picked-up when they are either full by calling our local waste handler company.
    d. The containers will be handled separately from routine waste disposal system.

Hepatitis B Virus (HBV) Vaccination

1. All employees listed under the Exposure Determination are eligible to obtain the vaccination series at no cost and during normal working hours.
2. First Aid providers, as incidental to the employee's job duties, are not required to be provided HBV pre vaccinations, based on current OR-OSHA rule interpretation. Our operations will currently not provide the vaccinations unless there is a workplace exposure incident. If the employee declines to be vaccinated after an incident a declaration declining will need to be signed.
3. The employees being offered pre-vaccinations series will go through their supervisor within 10 working days of initial assignment. An exception will be made if the employee can provide documentation of having previously received the complete hepatitis B vaccination series, and antibody testing shows that the employees is immune, or the vaccine is contraindicated for medical reasons.
4. Employees will incur no cost for the medical evaluations, medical procedures including the hepatitis B vaccination series and post exposure follow-up or laboratory tests. All the procedures will follow the U.S. Public Health Service recommendations and under the supervisor of a licensed physician.
5. Employees who decline the hepatitis B vaccination offered them shall sign the OR-OSHA required waiver indicating their refusal. At any time the employee may change his/her mind and the vaccination series will be offered.
6. If a routine booster of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster will be made available to all affected employees.
7. Any employee who has a workplace exposure is covered by the incident and medical surveillance provisions of this plan and if they have not previously taken the HBV vaccination will be urged to be vaccinated immediately.

Exposure Incident Evaluation & Follow Up

Any employee who has an exposure incident (they are exposed to blood or body fluids) shall immediately notify their supervisor who will refer the employee to their private physician or to our local health care facility for a complete medical evaluation and follow up.

1. The supervisor will provide the treating physician or healthcare facility with:
    a. A copy of the Bloodborne Pathogens rule, 1910.1030.
    b. A copy of the Bloodborne Pathogen Exposure Incident/Accident Report.
    c. Any medical records on the exposed employee regarding HBV vaccine status.
2. The health care provider will provide the employee with a written opinion of the evaluation.

Post Exposure Investigation

As part of the follow-up on an "exposure incident" the Safety Committee will conduct an investigation (keeping all personal health information confidential).

1. It is critical to remember that an exposure incident is an "unprotected exposure to blood or other body fluids including a skin exposure involving contact with blood, especially when the exposed skin is chapped, abraded, or afflicted with dermatitis, or a needle/sharp exposure to blood or body fluids during the course of their work."
2. Small splashes of blood on intact skin could be classified as an exposure incident.

The following steps are to be taken as part of the post exposure investigation:

1. Report the incident/accident immediately to your supervisor who will contact the Safety Committee who begins the process of investigating the incident and scheduling a confidential medical evaluation and follow-up activities for the employee.

2. The supervisor and employee will ensure that the circumstances of exposure are recorded and investigated. The enclosed Exposure Incident Form will be used to ensure that relevant information including the routes of exposure, the activity in which the employee was engaged at the time of exposure, and the extent to which appropriate work practices and protective equipment were used and a description of the source exposure shall be recorded.
3. Treatment will be sought as soon as practical but at least within 24 hours of the incident.
    a. Treatment involves information, if possible, about the source person and employee's medical condition and vaccination status.
    b. Once an exposure has occurred, a blood sample will be drawn after consent is obtained from the source individual unless identification is infeasible. The blood will be tested for hepatitis B and antibody to HIV as soon as feasible. The arrangement to obtain consent and testing will be performed by the Human Resource Department in conjunction with hospital, coroner or treating Physician. (The physician or clinic will provide the consent form.)
    c. Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity of the infectious status of the source individual. This will be done by the health care professional treating the employee.
    d. An exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained. If baseline blood is drawn, but the employee does not consent for HIV serologic testing, the sample shall be preserved for at least 90 days. If within 90 days of the exposure incident, the employee elects to have the sample tested, such testing will be done as soon as feasible. Additional HIV follow-up testing shall be offered based on USPHS recommended schedule. Currently that includes a 6 week, 12 week and 6 month HIV test.

Recordkeeping

1. Medical Records shall be established and maintained for each employee with occupational exposure.
   The Human Resource Department will maintain the CURRENT employee medical records during length of employment. We will keep the records after the employment for a minimum of 30 years. The record will be confidential and will contain the following information as required by the OR-OSHA standard:
    a. Name and social security number.
    b. Copy of employee's vaccination status and any medical records that are relative to employee's ability to receive the vaccination.
    c. Copy of the results of examinations, medical testing, and follow up procedures as the result of a post-exposure incident medical treatment.
    d. Copy of medical professional's written opinion. A copy of the information provided to the medical professional.
2. Sharps Injury Log:
   The employer shall establish and maintain a sharps injury log for the recording of subcutaneous injuries from contaminated sharps. The information in the sharps injury log

shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

a. The type and brand of device involved in the incident.
b. The department or work area where the exposure incident occurred.
c. An explanation of how the incident occurred.

3. Training Records: The Human Resource Department and Supervisor will maintain the training records for minimum of 3 years. This includes:
    a. Dates of the training sessions.
    b. Contents or summary of the training.
    c. Names and qualifications of the persons conducting the training.
    d. The names and job titles of all persons attending training sessions.

Training and Communication

The following lists the topics required to be covered in the annual Bloodborne Pathogen Program initial and annual training.

1. An accessible copy of the Bloodborne standard and an explanation of its contents.
2. A general explanation of the epidemiology and symptoms of Bloodborne diseases.
3. An explanation of the modes of transmission of Bloodborne pathogens.
4. An explanation of the exposure control plan and the means by which the employee can obtain a copy of the written plan.
5. An explanation of the appropriate methods of recognizing tasks and other activities that may involve exposure to blood or other potentially infectious materials.
6. An explanation on the use and limitation of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment.
7. Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
8. An explanation of the basis for selection of personal protective equipment.
9. Information on the hepatitis B vaccine, including information on its effectiveness, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
10. Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
11. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and medical follow-up that will be made available.
12. Information on the post- exposure evaluation and follow-up that is required to provide for the fire fighter following an exposure incident.
13. An explanation of the signs and labels and /or color coding.
14. An opportunity for interactive questions and answers with the training instructor.

The training program will be given initially AND annually for all staff who may have blood or infectious body fluid contact.

The training is to be documented and a written record kept in the employee's training file for at least 3 years. Each employee is provided access to all the training materials including video tape program and instructor's background information.

CHAPTER 4:CITY OF NEWPORT CONFINED SPACE ENTRY PROGRAM

Policy Statement

The City of Newport is committed to a safe and healthful workplace for its employees. The purpose of this written program is to identify permit spaces at this workplace and to ensure that all employees will enter, work in, and exit permit spaces safely.

Employer Responsibilities

The City of Newport will do the following to ensure the health and safety of those who work in and around permit spaces:

- Identify all permit spaces within its areas of responsibility.
- Inform affected employees of the location and the hazards in permit spaces.
- Prohibit unauthorized persons from entering permit spaces
- Train entrants, attendants, entry supervisors, and in-house emergency responders in their respective duties.
- Provide all necessary equipment for permit-space work at no cost to employees, maintain the equipment, and ensure that employees use the equipment properly.
- Inform contractors about the permit-space program and coordinate entry operations.
- The City of Newport designates the following persons to implement and manage the permit-space program:

Overall program. Overall implementation and maintenance of the written program, including employee certification or training that satisfies the requirements of OAR 1910.146.	Management
Permit-space locations. Location and identification of all confined spaces in areas of responsibility.	Department Heads
Training. Ensure that authorized entrants, attendants, entry supervisors, and on-site emergency responders are properly trained and have periodic refresher training.	Department Heads
Emergency response. Ensure that emergency responders are informed of all permit-required confined spaces at the workplace and have access to the spaces for drills and other training exercises.	Department Heads
Equipment. Ensure that all equipment for authorized attendants and entrants is properly maintained and is available when needed.	Department Heads

Record keeping. Schedule review of Plan annually.	Safety Coordinator

Confined space means a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
3. Is not designed for continuous human occupancy.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

Informing Employees & Preventing Unauthorized Entry

All confined spaces, with the exception of manholes, will be posted to prohibit entry except by authorized trained persons in accordance with the Confined Space Entry Plan. Employees will be notified during training that manholes and other confined spaces must not be entered without authorization and training.

Pre-entry Training

Only trained and qualified employees will be authorized as entrants, attendants, entry supervisors or in-house emergency responders. Training will ensure that they have the understanding, knowledge, and skills to perform their duties safely. Workers must receive training or retraining:

- Before their duties are assigned or changed.
- When their work presents a hazard for which they haven't been trained.
- When they do not follow entry procedures.
  City of Newport Confined Space Entry Program.

Refresher training will be offered annually.

Duties of authorized entrants, attendants, and supervisors

Working in permit spaces is a team effort involving authorized entrants, attendants and supervisors. Their duties and responsibilities are shown below.

Entrants

Authorized entrants are those permitted by an employer to enter a permit space. Entrants have the following duties and responsibilities:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Using required equipment properly.

- Communicating regularly with the attendant.
- Notifying the attendant immediately of hazardous conditions.
- Leaving the space immediately during a hazardous condition or when the attendant orders an evacuation.

Attendants

Authorized attendants are those who monitor entrants' activities from outside the space. Attendants have the following duties and responsibilities:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Knowing how many entrants are in the permit space.
- Staying out of the space during entry operations.
- Keeping in contact with entrants.
- Ordering an evacuation for a hazardous condition.
- Keeping unauthorized persons away from the space.
- Activating rescue operations.
  City of Newport Confined Space Entry Program.

Entry Supervisor

The entry supervisor makes sure attendants and entrants follow entry-permit procedures. He or she may also serve as an attendant. The entry supervisor is responsible for the following:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Verifying that the entry permit is accurate and current.
- Stopping entry operations and canceling the entry permit when permit-space work is done or during a hazardous condition.
- Ensuring that responders will be available in an emergency.
- Removing any unauthorized person who enters the space.
- Ensuring that entry operations are consistent if another authorized person must replace an attendant or entrant.

Entry permit procedure

No employee will enter a permit-required confined space without an entry permit first having been completed and signed by the entry supervisor. The steps of the entry permit procedure include the following:

Obtain an entry permit form from Division Supervisor.

Accomplish all pre-permit activities required for entering the space, including atmospheric testing, controlling hazards, having required equipment on hand, and providing for emergency services.

Complete all items on the entry permit.

Have the entry supervisor authorize and sign the permit. If any item on the permit is not checked as required (meaning not yet completed or available), the permit will not be signed.

Post a copy of the entry permit outside the confined space. Keep it there until the entry operations are finished and the supervisor cancels it.

Proceed with entry operations.

Emergency Response

Non-entry rescue requirements
Non-entry rescue is the preferred method for rescuing an entrant from a permit space. Employees must use retrieval systems to rescue an entrant unless the equipment would increase the entrant's risk of injury.

Employees will not enter a permit space to respond to an emergency unless they have been properly trained and equipped. Notify Emergency Responders (911) in the event of any incident/accident or non-entry rescue/retrieval.

If a permit space rescue is necessary, the attendant is responsible for the following:

- Summoning emergency responders.
- Attempting to rescue entrants using only non-entry rescue equipment.
- Monitoring the emergency and informing responders about the number of victims, their condition and hazards in the space.

Entry rescue requirements
Only responders designated by the City of Newport can enter a permit space during an emergency. This does not prohibit an entrant from assisting another to exit the space, when conditions remain within the requirements of the permit.

Summoning off-site responders
The City of Newport has made arrangements with the following off-site responder to provide rescue and emergency services:

Newport Fire Department
Non-emergency phone: 265-9461
Emergency: 911
Response time: 5 minutes

The Department Heads have informed the Newport Fire Department of the hazards they may encounter if they are summoned, and have provided the rescue service access to permit spaces to develop appropriate rescue plans and practice rescues.

Contractors
Whenever contractors are to work in a confined space owned or controlled by the City, the Project Manager will notify the contractor in compliance with OAR 1910.146 (c) (8) as follows:

- Apprise the contractor of any hazards in the space, and any experience the City's employees have had with the space.
- Apprise the contractor of any precautions City employees have taken for entry.
- Coordinate entry operations if more than one contractor or the City's employees will also be entering the space.
- Debrief the contractor to determine if any problems were encountered requiring changes in procedures.

Program evaluation

The Safety Coordinator will review this Plan, and all cancelled permits for entries made under the Plan, at least annually. The Plan will be revised as necessary to ensure that employees participating in entry operations are protected from permit space hazards.

The Plan will also be reviewed at any time there is reason to believe that the program does not adequately protect employees.

Permit-space Locations and Hazards

Division Supervisors have surveyed the workplace and identified confined spaces, the hazards in the spaces, and the method(s) necessary to eliminate or control the hazards. Entry requirements have been developed for each class of sites.

Non-permit spaces - no atmospheric hazards

These spaces have no atmospheric hazards and all other hazards have been eliminated. Employees can enter and work in them without a permit as long as the spaces are hazard-free.

The Superintendent in whose area of responsibility the space falls will evaluate and test the space and certify it to be hazard-free. Spaces should be retested periodically to ensure against changed conditions.

Permit spaces - controllable atmospheric hazards

These spaces have actual or potential atmospheric hazards that can be controlled with continuous forced-air ventilation before workers enter. Employees

Can enter and work in them, using alternate procedures, without a permit as long as they are hazard-free.

All such spaces must be tested as noted above prior to entry, and test results recorded.

Ventilate the space with forced-air, test for contaminants and oxygen deficiency, and record those results.

If atmospheric tests are within normal ranges, the employee may enter. Testing and ventilation will be maintained continuously during the entry.

If at any time the atmosphere tests outside of acceptable levels, entrants will immediately exit the space.

Permit-required spaces

These spaces have non-atmospheric hazards, or atmospheric hazards that cannot be controlled with continuous forced-air ventilation. Employees can enter them ONLY under the entry-permit procedures established in this written program.

Guard the space as necessary to prevent unauthorized or inadvertent entry, using barricades, cones, or similar devices.

Isolate the space from external hazards. If electrical panels will be opened, or if hazardous equipment could start automatically or inadvertently, shut off and lock out power to the facility. Close valves or block pipes that could introduce hazards or cause engulfment.

Test the atmosphere from outside the space with a direct reading meter for oxygen level, flammable/explosive vapors, carbon monoxide and hydrogen sulfide. Ventilate with forced air if necessary and test again. Ventilation, if used, must be maintained for the duration of the entry. Atmospheric levels will be monitored continuously during the entry.

If atmospheric hazards cannot be controlled within safe levels, entrants must have air supplied through SCBA or supply line apparatus.

Entrant will wear full-body harness with lifeline attached. Hoisting equipment will be used if the space is deeper than five feet.

Contact emergency responders, Newport Fire Department, 265-9461 to advise that entry is about to be made into a permit required confined space.

Complete the entry permit documenting the conditions of entry and measures to be taken, signed by the entry supervisor, and post.

Attendant must remain outside the space, in constant communication with entrants, either by voice, radio or other means, until all entrants exit. The attendant will keep unauthorized persons out of the space and monitor the space for hazards. Should any hazards develop, the attendant will order entrants to exit the space, and if necessary summon emergency responders, Newport Fire Department (911).

When work is complete and entrants have exited the space, the permit will be canceled by the entry supervisor. Notify emergency responders, Newport Fire Department, 265-9461, that entry has ended.

Canceled permits will be filed and retained for a minimum of one year.

CHAPTER 5. HAZARD COMMUNICATION PROGRAM AND CHEMICAL HAZARDS

Purpose

The Hazard Communication Program is an integral part of our employee safety and health awareness program. We have adopted chemical hazard control programs to ensure our compliance with various different hazardous material regulations and the safety of our employees.

The purpose of this program is to provide information about chemical hazards and the control of hazards via our comprehensive Hazard Communication Program which includes container labeling, Material Safety Data Sheets (MSDS) and employee training. The goal of the program is to eliminate the possibility of illnesses and injuries caused by exposure to chemicals.

This written program will be available at:

- Wastewater Treatment Plant
- Water Treatment Plant
- Fire Stations
- City Hall
- City Shops
- Parks and Recreation
- Police
- Library

The program is available for review by any employee, outside contractors, or the Oregon OSHA compliance staff during an inspection.

Applicable Legal Standards

Federal: 29 CFR 1910.1200 “Hazard Communications”
State: OAR Division 437 Division - 2
State: OAR 437 - Division 153 "Pipe Labeling"

This chapter does not cover the requirements of OAR 437 - Division 2 and 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals. Water treatment facilities will need to comply with this standard if they are using 1500 pounds or more of chlorine.

Definitions

Hazardous Chemical - Any chemical which is a physical hazard or a health hazard (potential injury or disease agent).

Hazard warning (label) - Any words, pictures, symbols, or combination thereof appearing on a label Or other appropriate form of warning to convey the hazards of the chemical in the container.

Material Safety Data Sheet - Written or printed material concerning a hazardous chemical which is prepared in accordance with OAR Division 2 and 29 CFR 1910.1200.

General Responsibilities

1. Management: It is the management's overall responsibility to see that hazardous materials are handled safely and that employees are trained in the physical and health hazards associated with the chemicals.
2. Supervisor and/or Department Manager: The supervisor and the Department managers will work together to ensure employee training, appropriate container labeling, availability of the MSDS, maintenance of the chemical inventory, and information is provided to outside contractors. The supervisor will see that the initial Hazard Communication orientation for all new employees, volunteers, and temporary employees is given.
3. Supervisor: Each supervisor is responsible for maintaining MSDSs for their work areas. The supervisor will ensure that all their employees are trained on specific chemical hazards and necessary precautions. They are also responsible to see that secondary containers are labeled.
4. Staff who orders chemical products: Staff who orders chemical products are to ensure that original containers have legible labels and that MSDS have been received so that the product can be delivered.
5. All Employees: All Employees are responsible to read the labels and MSDS for products they use. Attend the hazard communication training and properly handle chemicals per the labels, MSDS and training. Employees generating secondary containers are responsible to label the containers or see that they are using properly labeled containers.

Procedures

1. Container Labeling:
    a. PRIMARY CONTAINER LABELING: (Chemical container as received by manufacturer)
        i. Oregon and Federal OSHA requires that all chemical manufacturers, importers, and distributors properly label all shipments of hazardous chemicals with:
            1. The identity of the chemical.
            2. Hazard warnings.
            3. The name and address of the manufacturer.
        ii. No container of hazardous chemicals will be released for use until the label information is verified by department staff who ordered the product.
        iii. All employees are to be aware that the label must be maintained on the chemical container and will notify their supervisor or environmental services representatives if any unlabeled container(s) are discovered in their work area.
    b. SECONDARY CONTAINER LABELING: Containers that hold transferred hazardous materials from the original to a secondary use container are required to be labeled.
        i. The employee in charge of the transfer must ensure that a hazard warning label is placed on the container. Portable containers which only one employee uses and is transferring chemical to be completely used during his or her shift (immediate use) are not required to be labeled. But if more than one employee uses the containers or material is stored over to the next shift, it must be labeled.
        ii. The hazard warnings must be legible, in English and prominently displayed. This includes labeling the product name and hazard warning. If a label becomes torn or not legible the employee using the product must re-label it.
        iii. We will use permanent marking pens to label the secondary containers.
2. Department of Transportation Placards
    a. Vehicles that are transporting hazardous materials may be required to have Department of Transportation placards.

b. Exceptions for public sector entities include persons responsible for determining whether or not placarding is required on a vehicle should have a good understanding of the Department of Transportation placarding regulations.

3. Material Safety Data Sheet (MSDS)
   a. Chemical manufacturers and importers are required by these rules to develop a MSDS for each hazardous chemical product. The MSDS contain detailed information about the health and physical hazards associated with the product. It is the responsibility of the individual ordering or purchasing the chemical to ensure that they receive an MSDS with the shipment of new chemicals or provide the MSDS where there has been a change. To ensure that we receive the MSDS, the following notification should be added to all chemical purchase orders:
      i. "Material Safety Data Sheets will at any location that has chemical products. They will also be maintained by the division supervisor and maintained with proper labeling and appropriate manufacturers information."
   b. If MSDS is not given to receiving then receiving will notify the individual who ordered the chemical and the product will not be released for use until the MSDS is available.
   c. When MSDSs are received by the various departments they are to be forwarded to the appropriate location, for copying, distribution and inclusion in the MSDS binders and on the inventory list.
   d. MSDSs are available to all our employees for review during each work shift. If MSDSs are not available or new chemicals in use do not have MSDSs, immediately contact your supervisor.
   e. A list of Hazardous Chemicals will be kept as part of the MSDS index - table of contents. The lists (index) will be updated as new chemicals are purchased. The Supervisor is responsible to maintain the current inventory list of chemicals.
4. Employee Training and Information
   a. A key component of this program is training employees about the hazardous chemicals which they may come in contact. Our training program is done in two parts.
      i. The initial orientation is done by the Department Supervisor. The elements of training covered in the initial orientation includes:
         1. An overview of the requirements contained in the Hazard Communication Rules, Division OAR 437 Division 2 and 29 CFR 1910.1200.
         2. Location and availability of our written hazard communication program.
         3. How to read labels and review an MSDS to obtain appropriate hazard information.
   b. The employee's supervisor will review the specific chemicals, hazards and precautions needed in the employee's work area. The training program will cover the following elements:
      i. Review of the chemicals present in the workplace.
      ii. Physical and health effects of the hazardous chemicals.
      iii. Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
      iv. How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment.
      v. Steps we have taken to lessen or prevent exposure to hazardous chemicals.
      vi. Emergency procedures to if our employees are exposed to these hazardous chemicals.

c. It is critically important that all employees understand the training. If you have any additional questions please contact your supervisor. Each employee will fill-out a training verification form which asks the employee if he or she understood the training.
d. When new chemicals are introduced, supervisors will review the above items as they relate to the work area.
e. Some employees may require additional training depending upon their job tasks. Employees who are involved with process safety chemicals, e.g. 1500 pounds of chlorine, and employees who are involved with hazardous waste operations and emergency response will need to have 4 to 8 hours of hazardous material training. Refer to the Federal OSHA 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals and 1910.120 Hazardous Waste Operations and Emergency Response for the additional training requirements.

Hazardous Non-Routine Tasks

1. Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee shall review information about hazards to which they may be exposed during such an activity. This shall be the responsibility of each supervisor.
2. The training information will include but not limited to:
   a. Specific chemical hazards.
   b. Protective equipment and safety measures which must be utilized.
3. Measures that have been taken to lessen the hazards including ventilation, respirators, presence of another employees and emergency procedures.
4. The MSDS for employees to review.

Hazards of Chemicals in Piping Systems

1. All hazardous materials carried in piping systems are required to be labeled under OAR 437- 002- 0378 "Pipe Labeling".
   "Pipes and piping systems which contain hazardous substances (any health or physical hazardous agent) or transport substances in hazardous state shall be labeled…"
2. The pipes must be colored coded or have lettered labels. The label shall give the name of the contents in full or abbreviated form. The labels may be posted in the area of the pipe/piping systems. The labeling shall be applied, at a minimum, at the beginning and end of continuous pipe runs. A complete hazard label is not required on pipes.

Informing Contractors

Our organization occasionally uses outside contractors for some projects, as a result, we must inform the contractor of any chemical hazards his/her employees may be exposed to. The following methods will be used to inform outside contractors of the potential chemical hazards in their work areas:

1. To ensure that outside contractors work safely in our plant, it is the responsibility of the supervisor to ensure that we provide the required chemical information:
   a. Hazardous chemicals to which they may be exposed while on the job site.
   b. Precautions the employees may take to lessen the possibility of exposure.
   c. Location of MSDS for chemicals they are potentially exposed to.
2. If additional information is needed the safety manager should be contacted for assistance.

Chemical Hazards Requiring Additional Compliance Issues

1. There are potential chemical exposures that have additional OR-OSHA requirements that our employees may be exposed to. (Examples: Hexavalent chromium, lead, asbestos, silica, vinyl chloride, cadmium, benzene etc.) If there are job tasks that have potential exposures to these chemicals, the following will be conducted.
    a. Exposure monitoring that is representative of employee exposures.
    b. Recordkeeping: Maintain all exposure monitoring records.
2. If exposures exceed the OR-OSHA exposure limits, we will implement all required protective measures in compliance with the applicable OR-OSHA standard. This may include:
    a. Written Compliance Plan
    b. Personal Protective Equipment
    c. Engineering Controls
    d. Medical Monitoring
    e. Employee Training

CHAPTER 6. CONTROL OF HAZARDOUS ENERGY – LOCKOUT TAGOUT

Purpose

This Lockout/Tagout Program was established to provide the maximum protection to our employees whenever they must isolate machines or equipment from energy sources and to prevent unexpected energization, start-up or release of stored energy that could cause them injury. The primary method of hazardous energy control will be accomplished by utilization of this lockout/tagout program.

Employees involved in the maintenance, repair, and servicing of equipment that requires the by-passing of guards are required to follow this policy. Those involved will be instructed in the safety significance of the lockout procedures to follow.

1. Each operator and maintenance person will know all the energy sources within equipment, machinery or process. All sources of energy are covered under the procedures of this program, including electrical, mechanical, hydraulic, pneumatic, chemical and thermal energy.
2. Repair and service on cord and plug electrical equipment is required to have the electric cord pulled from the energy source prior to repair. If the plug remains under the exclusive control of the employee performing the servicing and there are no other sources of energy (mechanical, pneumatic, hydraulic, or stored energy), no additional lockout/tagout procedures are required.

Applicable Legal Standards

State: OAR 437 Division 2
Federal: 29 CFR 1910.147

General Responsibilities

1. Management: Management is responsible to see that the overall policy is developed and works with the Safety Committee, and employees to ensure implementation.
2. Authorized Employees: Only workers and supervisors who have received special training to recognize understand the particular hazards involved with the tasks to be performed and the type and magnitude of energy to be controlled are authorized to implement the LOCKOUT/TAGOUT procedure.

   It is the trained and authorized employee's responsibility to follow this program. Employees are to use their own lock and key (or individual lock at the lockout center). No other person shall be allowed access to your key or your lock. No one is allowed to remove your lock except the authorized person applying the lockout/tagout.
3. Affected Employees:
   a. An affected employee is one whose job requires him/her to operate or use equipment on which servicing and maintenance is being performed under lockout/tagout, or whose job requires him/her to work in the immediate area in which such servicing and maintenance is being performed.

   b. An affected employee’s responsibility is to ensure that they do not attempt to operate any equipment being locked-out/tagged-out and follow all safety procedures in shut down and restarting equipment.

4. All Other Employees: Any other employees who may see lockout or tagout on equipment are to honor the locks and tags and make no attempt to start or remove the devices.
5. Training: A key component of this program is employee training. It is the supervisor's responsibility to see that all employees involved in this program are trained. The authorized employees are to receive additional specialized training as outlined in this program. The training must be documented by the Supervisor.

Basic Lockout/Tagout Procedures

1. All equipment energy sources capable of being locked out during servicing, repair, or maintenance will be locked-out to prevent accidental or inadvertent operations which could cause injury.
   Energy sources can include: electrical, pneumatic, hydraulic, stored energy: gravity, springs; thermal; fluid flow - pressure, all geothermal piping, and gasoline/diesel driven machines.
2. Equipment energy sources not capable of being locked out will be isolated and then tagged-out to inform all others of the safety procedure in use and warning that no operation of the equipment is permitted.
   a. Example of some equipment not capable of being locked out includes: 110 circuit breakers, and older power panel installations.
   b. Tags will be used at these energy isolating devices. We will design systems capable of being locked-out if major replacement, repair, renovation or modifications are made on the electrical systems or equipment.
3. Typical conditions requiring lockout or tagout devices include:
   a. Anytime repairs, servicing and/or changes are being done on machines or equipment and the safeguards are by-passed, or work on electrical circuits in which the employee could come into contact with hazardous energy occurs (mechanical, pneumatic, hydraulic, or stored energy).
   b. Whenever moving parts of machinery or equipment are being cleaned or oiled and accidental contact with movable parts is possible.
   c. When it becomes necessary to remove a plug or to a clear blockage.
   d. Mechanisms or pumps which expose the employee to potential release of hazardous energy.
   e. When working on lines which contain hazardous substances, or high-pressure lines. Such systems should be clearly marked. Valves in the system should be capable of being locked out. In the case of high-pressure lines, there should be a means of safely relieving pressure in blocked sections.
   f. To lockout power to equipment to prevent use by unauthorized persons and/or to prevent use in off hours.
4. No employee shall attempt to operate any switch, valve, or other energy isolating device bearing a lockout or tagout device.
5. Lock securing switch levers to prevent activation of electrical circuits or equipment on which work is being done. If it is not capable of being locked apply a tagout which is securely fastened to the disconnect lever or at the immediate area to warn of the on-going procedure.
6. Other basic controls that may be needed due to the type of energy present include:
   a. Hydraulic Energy - Close valve and bleed off line or block the device.
   b. Air Pressure - Close valve and bleed off pressure from line prior to working on the device.

Note: Some valves open when they lose pressure, which can cause hydraulic or other liquid flows that could be hazardous to employees. These valves must be isolated and controlled.

c. Springs - Attach a hold down device or leave in open position where no stored energy is present.
d. Fluid Flow - Water Pressure: Insure proper gate devices are used that hold the back pressure, or drain lines so no fluid pressures are present.

7. Additional Shutdown and Lockout Procedures are needed for specialized equipment and vehicles during maintenance.
   a. Heavy Equipment and Vehicles during servicing - the mechanic will follow a normal shut down of the equipment. The equipment is all gasoline or diesel engine powered.
   b. The heavy equipment will have a tagout placed on the steering wheel which indicates that the mechanic could be injured if the equipment was started.
   c. Depending on the type of work being performed there may be various other sources of energy such as hydraulic and gravity that could dissipate during servicing. Additional control needs would include but not be limited to:
      i. Dump Trucks or any type of hopper or hood that could fall - the dump bed or device will have the safety bars in place prior to any work around or under a lifted bed for support against gravitational pull due to the potential loss of hydraulic pressure.
      ii. Backhoes or other hydraulic operated boom devices - If the shovel or boom is raised then the safety bar or blocking devices will be in place if the employee is working under the device. If the shovel or boom devices are on the ground in an energy neutral position additional controls would not be necessary.
      iii. Mowers - The mower arm which is hydraulically controlled needs to be set on the ground prior to any work or use safety bars or other secure blocking devices if the head is worked on in an up position.

LOCKOUT/TAGOUT HARDWARE (EQUIPMENT)

1. Locks, tags and hasps will be used as energy isolating devices. Valves with handle and lock attachment hole will be locked out. If the locks become damaged in any way immediately seek a replacement lock.
2. Valves not capable of being locked-out will have tags placed on them with a slip lock plastic attachment device capable of withstanding 50 pounds of pressure.
3. The hardware is required to meet the following criteria:
   a. Durable to withstand weather and all types of exposures.
   b. Standardized by color, or shape, or size, or format.
   c. Locks substantial so they cannot be removed without excessive force.
   d. Singularly identifiable.
   e. Device used only for controlling energy and not used for other purposes.
   f. Tags substantial to prevent inadvertent or accidental removal.
   g. Tag attachment devices need to be non-reusable, attached by hand, self-locking, minimum unlocking strength of no less than 50 pounds.
   h. Lockout/tagout devices - shall indicate identity of employee applying device.
   i. Tag must have a written warning on it, i.e., Do Not Start.

4. Locks, tags, hasps, chains, and other restraining devices will be kept by each authorized employee. Extra locks and equipment will be kept at the supervisor's office. The supervisor will review the location of the lockout equipment and how to obtain additional lockout equipment as necessary.
5. Out of Service Tag - Employees may need to use an out of service tag when a piece of equipment is not functioning properly and it needs to be removed from service for the protection of the equipment.
   THE OUT-OF-SERVICE TAG IS NOT TO BE USED FOR LOCKOUT/TAGOUT HAZARDOUS ENERGY CONTROL.
   REMEMBER once work begins on the equipment that places the employee in danger of hazardous energy release the authorized employee(s) must place their personal lock and tag on the energy isolating device.

SEQUENCE FOR A LOCKOUT OR TAGOUT PROCEDURE

The lockout/tagout procedure must be conducted in the following manner. No deviations will be tolerated.

1. The **authorized** employee shall notify the affected employees that the lockout/tagout system is going to be utilized. In many cases no one's safety will be affected by maintenance and repair activities, thus there will not be any affected employees.
2. If a particular piece of equipment is operating, it must be shut down by the normal stopping procedure such as depressing the stop button or opening the switch. Some equipment has detailed procedures that need to be followed by trained employees.
3. The authorized person shall lock out and tag out the energy isolating device of the equipment or machines with their individual assigned lock or by using individually keyed locks. These devices are assigned to each maintenance employee as part of his/her tools. The locks in the lockout center are individually keyed and can be used by other authorized employees or for additional hardware if multiple disconnects must be locked out during maintenance.
4. The authorized employee must operate the switch, valve or other energy isolating device to make sure the equipment is isolated from its energy source. Stored energy, such as the energy found in springs, rotating fly wheels, hydraulic system or compressed air or gas lines must be dissipated or restrained by either repositioning, blocking or bleeding down.
5. After ensuring that no personnel are exposed, the authorized person shall complete another check to make sure that all of the energy sources have been disconnected. The type of verification testing will depend on the type of equipment or electrical installation. Equipment may be tested by trying to operate it by turning on the controls.
   CAUTION: Return operating controls to neutral or off position after test.
6. Most of the electrical disconnects operating various pieces of equipment can be locked out; however, if other equipment energy requiring control cannot be locked out then a tagout device will be used. The tagout device must be attached on or as close as possible to the energy isolating device. The tag must clearly indicate that the operation or start-up of the energy isolating device from the safe or off position is prohibited.

EQUIPMENT TESTING UNDER LOCKOUT/TAGOUT

At times, some of our equipment must be tested or positioned while doing maintenance or repair. The following procedure must be followed under those conditions:

1. Clear the machine or equipment of all tools and materials that are non-essential items.
2. Make sure that all of the employees are clear of the machine or equipment and notify them that the machine will be energized.
3. The authorized employee shall remove the lock.

4. Energize and proceed with the testing or positioning.
5. De-energize all systems and complete the shut down procedures before continuing any maintenance or service.

RESTORING EQUIPMENT TO NORMAL OPERATIONAL STATUS

When the authorized employee has completed their work, then the lockout device and tag can be removed. The following procedure will be followed during that process:

1. The authorized person shall inspect the work area to make sure that all of their tools have been removed from the machine and ensure that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed.
3. Notify all of the affected employees that the equipment is to be restarted.
4. Remove Lockout and Tagout device.
   Note: The authorized employee is the only person who shall remove the lockout or tagout device. The only exception to this is under the following conditions.

REMOVAL BY SOMEONE OTHER THAN THE PERSON THAT APPLIED THE LOCK

Removal of a safety lockout or tagout device by any other person than the authorized employee who applied it may only be done under the direction of the supervisor, or in his or her absence, by a lead worker or department manager, under the following procedure.

1. The supervisor will verify that the authorized employee who applied the device is not at the facility by checking with the immediate supervisor and/or co-workers.
2. The supervisor will call the authorized employee at home if possible to inform him/her that his/her lockout and/or tagout device needs to be removed. If the employee cannot return to remove the lock then the supervisor will inform the person that the lock is being removed. The supervisor or lead person may then use a master key or second key that is kept in a locked, inaccessible location known only to the supervisor or lead person and remove the lockout device.
3. The supervisor must follow all the correct protocols for removal of a lockout or tagout as outlined above, safely place the equipment back in service, and then notify affected employees.
4. If all reasonable efforts have been made to contact the authorized employee, but the person was not reachable, the supervisor will ensure that the authorized employee upon return to work will know that his/her lock was removed and that routine operation of the equipment is now occurring.

PROCEDURE INVOLVING MORE THAN ONE PERSON

If more than one employee is required to lockout or tagout equipment, each shall place his/her own personal lockout device or tagout device on the energy isolating device(s). When an energy isolation device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) is to be used.

SHIFT OR PERSONNEL CHANGES

During shift or personnel changes the hazardous energy control responsibility will be transferred in a manner that maintains uninterrupted protection for the employees involved.

1. All employees in the immediate affected work area shall be informed of the transfer of lockout/tagout devices between the off-going and on-coming employees
2. On-coming shift employees must verify the equipment has been de-energized and proper procedures have been followed.

3. The on-coming authorized employee shall apply his/her own lockout/tagout device to the energy control source prior to the removal of the lockout/tagout device by the off-going employee.
4. The on-coming authorized employee shall ensure that no personnel are exposed, and as a check that all energy sources are disconnected, operate the push button or other normal operating controls to make certain the equipment will not operate. Return operating control(s) to the "off" position after the test.

CONTRACTORS

1. When hiring outside contractors to come into our facility to work on machines and equipment, their activities may create hazards which normally are not present to regular employees.
2. A copy of our procedures will be given to that contractor and a mutually agreed upon procedure established concerning the lockout/tagout devices that will be used to protect our employees and the contractor's workers. This coordination will help to ensure that all employees know what kind of work is to be performed, where and when it is to be performed, and how they are being protected.

PERIODIC INSPECTION

Periodic inspections are intended to assure that the energy control procedures continue to be implemented properly, and that the employees involved are familiar with their responsibilities. OR-OSHA requires that an inspection type audit of lockout procedure must be done AT LEAST ANNUALLY.

1. The supervisor will conduct periodic inspections of the Lockout/Tagout Program procedures at least annually to ensure that this procedure and the requirements of OR-OSHA rules are being followed.
2. The periodic inspection will be performed by an authorized employee not involved in the energy control procedure being inspected. The inspector must determine three issues:
    a. Whether the steps in the energy control procedure are being followed.
    b. Whether the employees involved know their responsibilities under the procedure.
    c. Whether the procedure is adequate to provide necessary protection and what changes, if any, are needed.
3. The inspector will observe and talk with the employees in order to make these determinations. These inspections are intended to provide immediate feedback and action to correct any inadequacies observed.
4. Written records shall be made of these inspections and the findings of these inspections will be kept by the Department Supervisor.

EMPLOYEE TRAINING

1. Retraining will be conducted whenever a periodic inspection reveals, or whenever there is reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures. The retraining will re-establish employee proficiency and introduce new or revised control methods and procedures as necessary.
2. Annual training review of this program by all affected and authorized employees is recommended.

DOCUMENTATION OF TRAINING

1. The supervisor will document that employee training has been accomplished and is being kept up-to-date. The certification shall be an individual certificate of training for each employee receiving the training.
2. The certificate includes each employee's name, job title, and signature line for the employee and training date, signature line for the supervisor or qualified person conducting the training, their job position and date.
3. This documentation shall be filed in the employee's training file.

LOCKOUT/TAGOUT DEFINITIONS

Affected Employee - An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed. The affected employee's safety may be affected by the de-energization of the equipment. An example would be in a maintenance shop when the air compressor will be shut down for maintenance and repair and the garage repair personnel have a vehicle on the hydraulic hoist. The lack of air pressure could cause the hoist to lower without notice. In this case, the garage staff would be affected employees.

Authorized Employee - A person who locks or implements a tagout system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment which must be locked or a tagout system implemented.

"Capable of Being Locked Out" - An energy isolating device will be considered to be capable of being locked out either if it is designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch, and other control circuit type devices.

Energy Source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout Device - A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Out-of-Service Device - This is a tag that is placed on equipment controls or at the main disconnect to notify other personnel that the equipment or process is taken out of service because it is not

functioning properly or equipment damage may occur or personnel does not want the equipment on-line for process reasons. It is never to be used as an energy control tagout.

The tag states:

CAUTION
(Explanation of why equipment is out of service)
Signed by:
Date:

Tagout device - A warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

THIS TAG STATES:

DANGER
DO NOT
OPERATE
SIGNED _____ DATE_____

BACKSIDE OF THE TAG STATES: “DO NOT REMOVE THIS TAG”

CHAPTER 7:NOISE EXPOSURE AND HEARING CONSERVATION

Purpose

We have adopted this Noise and Hearing Conservation Policy and Procedures to protect our employees from hearing loss and ensure compliance with the OR-OSHA Noise regulations. The regulations require that the City of Newport implement a hearing conservation program if employee's noise exposure levels exceed 85 decibels for an average of 8 hours.

The primary affected employees are our Police, Fire, Public Works, Airport, and Parks and Recreation Departments staff who occasionally work with loud equipment or in areas of possible high noise.

Current noise surveys will be provided to the department director to distribute to staff.

Applicable Legal Standard

Federal: 29 CFR 1910.95
State: OAR 437 Division 2

Definitions

Permissible Noise Exposure - There are two exposure levels that if exceeded require specific compliance activities.

1. Permissible Noise Exposure - Eight hour time-weighted average level of 90 decibels on the A scale or a dose of 100%.
2. Action Level - An eight hour time-weighted average of 85 decibels on the A scale or a dose of 50%.

Representative Noise Exposure - Measurements of an employee's noise dose or 8 hour time-weighted average sound level that the employer deems to be representative of the exposures of other employees in the workplace.

1. Noise Dosimeter – An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.
2. Sound Level Meter – An instrument for the measurement of sound level.

Time-weighted average sound level - A sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

General Responsibilities

1. Management: It is the responsibility of Management to see that noise controls are implemented and maintained and that all employees at noise exposures in excess of 85 dBA time-weighted average are part of an effective hearing conservation program.
    a. This includes auditing the on-going program and training employees in the hazards of noise and required controls.

   To assure that representative noise surveys are conducted. The supervisor also maintains records of employee training and audits the overall program. In addition, he/she is responsible for the following tasks:

a. Overseeing the program and ensuring that employees are following the OR-OSHA standards and that employees' hearing is being protected.
b. Assuring that employee medical records and all past employee records per the OR-OSHA standard are maintained by the Administration or HR.
c. Assuring that their employees wear hearing protection, have annual hearing tests and are part of the annual noise training or hearing consultation.

2. All Noise Exposed Employees: All noise exposed employees are responsible for wearing appropriate hearing protection, taking an active part in the annual training and getting annual hearing tests.

Procedures

Noise Surveys

1. Noise surveys are required to be done on work operations that have potentially high noise levels (85 dBA and above).
    a. The noise measurements will be included in the Safety Manual.
2. Additional noise surveys are required to be taken when additional equipment is purchased or processes which could result in higher noise levels, and periodically to re-verify the test results.
3. Assistance with noise monitoring can be obtained from our insurance carrier, OR-OSHA Consultants, or through outside consultants.
    a. The noise survey measurements are recorded on the employees hearing test records.
4. Each employee exposed to noise at or above the 85 dBA average is to be informed of the results. This will be done by posting the data and including the information at the employee initial and annual employee noise training classes.

Hearing Protection

1. Hearing protection is required to be worn during the operation of equipment or processes that exceed 80 dBA noise levels as a time weighted average exposure.
    a. The hearing protection (ear barrier plugs, muffs, and foam plugs) should be available in all work places where employees hearing could be affected. The use and availability of the hearing protection will be pointed out to each new employee during their initial safety orientation.
    b. EMPLOYEES REQUIRED TO WEAR HEARING PROTECTION WILL BE INFORMED BY THEIR SUPERVISOR OR THIS POLICY.
2. Employees will be trained on how to properly fit the hearing protectors by their supervisor or with assistance from outside safety/health consultants. If anyone has problems with the devices please contact your supervisor or instructor.
3. Employees will be provided with at least two styles of protection, plugs or muffs, to try on determining which device would be best for them. All the devices provided will be evaluated to determine that if they provide adequate noise attenuation for the noise exposure levels.
    a. Each employee will be responsible for the maintenance of his/her assigned hearing protective devices.
    b. Disposable plugs will be discarded at end of shift or when they become soiled.
    c. Inserts or barriers will be checked prior to each use for any defects. If barriers are used the head band needs to be checked to ensure that it is tight and the insert is not torn, disfigured or does not properly seal. New devices will be obtained and used.
    d. Follow manufacturer's recommendations on maintenance.

Audiometric (Hearing) Testing

1. New employees assigned to a noise area (where the time weighted exposure to noise is above 85 dBA) will be given a baseline hearing test and then may be tested annually thereafter. The tests require that the employee not be in an occupational noise area for 14 hours prior to the test. This test will be the reference for further tests to determine if hearing levels change. The hearing test will be given by a certified audiometric technicians. Hearing tests showing a significant hearing loss are forwarded to the contract professional reviewer.
    a. Baseline or initial tests may be given to new employees at the time of hire even if they are not working in a noise area.
2. Significant threshold shift (STS) criterion: The hearing loss criterion is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 hertz (Hz) in either ear.
    a. The employee may be re-tested within 30 days and consider the results of the re-test to determine if a permanent shift has occurred.
    b. Employees will be informed if their tests show significant changes in their hearing levels based on OR-OSHA standards by written letter and follow-up by the employee's supervisor once notified of that change by our contract audiologists.
    c. In all cases of hearing loss the employee will be re-instructed on how to properly wear hearing protection. The supervisors will follow-up on all hearing tests that show a reduction in the employees hearing from the baseline.
3. If approved by the city the contract audiologists will determine if additional tests are needed and the status of the employee's hearing.

Employee Training

1. New employees will receive Hearing Conservation Training at initial assignment to a noise area. The training will be repeated annually for all noise exposed employees. The specific training materials are provided in this manual and are to be a guideline for supervisors and/or Safety Committee representatives to use.
2. A copy of the training materials will be available to our employees by contacting his/her supervisor or the city's safety coordinator.
3. A poster with information regarding OR-OSHA Noise & Hearing Conservation Rules will be posted on the safety bulletin at each of our locations where employees are potentially exposed to hazardous noise levels.

Noise Engineering Controls

1. The city along with its supervisors are responsible to determine if there are feasible engineering controls that could reduce noise levels to below 90 dBA as a time-weighted 8 hour average or make efforts to get the dBA levels even lower.
2. Engineering Control Feasibility Studies: In some cases there may be records of noise control studies done on pieces of equipment or processes. These records should be kept to show compliance with OR-OSHA noise engineering control standard. The records should be maintained for the duration the equipment or process is in use.

Recordkeeping

Records must be maintained for the various elements of the program. This includes the following requirements:

1. Noise Exposure Measurement:

    a. Time Frame: Current plus 2 years of results (note: the current record may represent measurements taken longer than 2 years ago. This is permitted as long as the readings are reflective of noise exposure levels).
2. Audiogram records:
    a. Time Frame: Duration of employment plus 5 years
3. Training Record
    a. Time Frame: There is no time frame given in the rules but it is the policy to keep the training records for each employee for the duration of employment and then forward all records to HR.
4. OSHA 300 Log Record
    a. Hearing loss is recorded on the OSHA 300 Log when an annual audiogram reveals a Standard Threshold Shift (STS) in either or both ears and the hearing level in the same ear is 25 decibels (dBA) above audiometric zero.
    b. Employee must be informed in writing within 21 days of the determination of permanent hearing shift.
    c. Record Keeper: The _____ is assigned responsibility for OSHA 300 Injury and Illness Log.

CHAPTER 8:PERSONAL PROTECTIVE EQUIPMENT

Purpose

We have adopted this Personal Protective Equipment (PPE) policy and procedures to ensure that when hazards cannot be fully controlled with engineering or process controls that employees use appropriate personal protection. This chapter is also to assist in ensuring compliance with OR-OSHA standards.

1. Our policy includes appropriate training on use and maintenance of PPE be provided by or arranged for by the supervisor. Employees are required to wear proper personal protective equipment.
2. The PPE provided shall be used as outlined by specific job procedures and maintained in a sanitary and reliable condition.
3. If employees provide their own protective equipment it is still our responsibility to assure its adequacy, including proper maintenance and sanitation of the equipment.

The selection of PPE shall be made by our management staff and it shall be designed to match the hazard and allow for employees to safely conduct their job tasks.

1. The PPE is designed to protect the worker from injury or harm. However, it is not designed to prevent the occurrence of an incident which might cause harm or injury, AND as a result, it is our policy to ensure that working conditions are safe and PPE is used as a back-up for additional protection.

Applicable Legal Standard

State: OAR 437 - 002 - 1910.132 -140 "Personal Protective Equipment"

Definitions

Personal Protective Equipment - Equipment worn by the employee to prevent injury or occupational illness wherever hazards from processes or equipment cannot be contained or eliminated at their source.

Mandatory Respirator Use (based on OR-OSHA standards) - Respirators are required to be provided and worn when it is necessary to protect the health of an employee due to overexposure to air contaminates.

National Institute of Occupational Safety and Health (NIOSH) Approved Respirators - NIOSH has established specific respirator approval standards that manufacturers must meet. Employers must select only NIOSH approved respirators based on the type of contaminant hazard.

Chapter Format

This chapter reviews basic requirements for personal protective equipment including:

- Head protection
- Hearing and ear protection
- Eye and face protection
- Hand protection
- Foot protection
- Fall protection

Written certificates outlining work operations/jobs that require specific PPE are provided on the YDrive. The certificate also provides basic description of the types of PPE that must be selected.

Respiratory Protection is covered separately in Chapter 9.

General Responsibilities

1. Management: It is the responsibility of entity management to ensure that PPE evaluations have been completed for jobs/tasks that would potentially require or have hazards that require PPE. Additionally, management must assure that proper PPE is made available in types and sizes as to fit employees.
2. Supervisor: It is the responsibility of the supervisor to see that employees are trained in the use of personal protective equipment and are instructed on what is required for their work duties. Managers will be responsible to assure all PPE is worn when the PPE Assessment indicates that PPE is necessary.
3. All Employees: Employees must follow all safety procedures as outlined in this chapter by OR-OSHA rules and manufacturer's recommendations in regards to personal protective equipment. Employees are required to inspect their equipment daily/prior to use and ensure that the equipment is functional. Any problems with the equipment shall be reported to the supervisor.
4. Safety Committee: The Safety Committee should include review of personal protective equipment in their quarterly inspection activities.

Procedures

1. Head Protection:
    a. Hard hats are to be used to protect the head from flying objects, impact, and electrical shock. Hard hats used at our work operations will meet ANSI standards for the job task.
    b. Hard hats should be used in the following jobs:
        i. While working around construction or maintenance field projects or equipment.
        ii. While working outside and around heavy equipment.
        iii. Working inside a confined space below ground.
        iv. In addition, hard hats shall be used by all employees when overhead hazards are present. This includes when working under floor openings or walkways, in areas with low ceilings, or in areas with protruding objects.
2. Hearing Protection: (See Chapter 7 for overall instruction about hearing conservation and protection)
    a. Earmuffs and earplugs are used to protect against hazardous noise levels when noise exposure levels cannot be adequately controlled by various engineering controls.
    b. Hearing protective devices are located at:
        i. Supervisor's Office
        ii. Tool Room
        iii. Supply Room
        iv. Supply Cabinets
        v. _____
    c. If earmuffs are worn, the temple bars of glasses will interfere with the seal of the ear piece. As a result, ear plugs should be worn by those required to wear safety glasses or glasses with corrective lenses.
3. Eye & Face Protection:

a. Eye and face protection is to be worn where there is a reasonable probability of injury to the eyes and face from flying objects, glare, harmful liquids, or injurious light, such as arc welding flash.
b. Eye protection needs to meet the following criteria:
    i. Provide adequate protection against the particular hazards for which they are designed.
    ii. Provide reasonable comfort and shall not unduly interfere with the movements of the wearer.
    iii. Be durable.
    iv. Be capable of being cleaned easily.
    v. Be stored in clean containers or packaging and kept in good repair.
c. The specific type of eye and face protection needed depends on the type of hazard.
    i. Particle hazards from grinding/chipping require safety glasses with side shields.
    ii. Face protection is worn when liquid splashes or significant particle matter could impact the face and cause injury
    iii. Liquid splash hazards require chemical splash goggles or safety glasses with a face shield.
    iv. Gas welding requires welding goggles.
d. Safety glasses must be worn when an eye hazard exists.

4. Hand Protection:
    a. Hand protection is worn to protect the hands from sharp wood/thorns, poison oak, and mechanical injury due to friction, heat, shearing/cutting actions, and for protection against chemicals.
    b. Chemical protective gloves are selected based on the type of rubber/plastic material which affords proper protection against specific chemical used. The selection will be made by the supervisor.
    c. Chemical protective gloves will be worn when there is skin contact with the following chemicals:
        i. Solvents contact
        ii. Skin contact with any corrosives
        iii. Chemical spill clean-up
    d. Mechanical protective gloves will be worn when employees are exposed to wood slivers, friction, sharp metal edges, hot or cold materials, and moving heavy objects. Gloves will be available by job task or in the use areas.
5. Foot Protection:
    a. Special foot protection is necessary when there is a potential for foot injury, or slipping, or when the feet may become wet due to the work environment. Your supervisor will work with employees who may have job assignments regarding special footwear.
    b. The following footwear is expected to be worn:
        i. Safety tip toes when there is a hazard from dropping heavy objects.
        ii. Rubber boots when exposed to wet conditions.
    c. The shoe policy should be periodically reviewed by the Safety Committee to ensure that appropriate footwear is used preventing foot injuries.
6. Fall Protection - PERSONAL PROTECTIVE EQUIPMENT
    a. When it is not feasible to use physical barriers to protect employees from falls, personal protective equipment (PPE) shall be used.
    b. PPE shall be chosen based on the following:
        i. Distance of potential fall.

ii. Impact on the body from the PPE during a sudden stop.
iii. Intended use of PPE (stopping fall as opposed to retrieval from a confined space.
iv. Fall arresting forces on the body.

c. The rescue responder i.e. the Newport Fire Department is the rescuer on record for City of Newport employees. And they shall be familiar with harnesses, tripods and equipment used by the public works department.
d. When a worker(s) enters a confined space, a helper wearing the same PPE shall be stationed at the entrance to the confined space and shall monitor those inside for the duration of the project
    i. Personal retrieval systems for rescue from below-ground level tanks or confined spaces.
    ii. Authorized personnel shall ensure the use of a lifeline attached to a manual or power operated winch with steel cable retracting lifeline. Alternatively, a block and tackle or ratchet winch can provide the lifting mechanism with limited human effort after the victim has been hooked up, provided a lock or over speed mechanism is incorporated. An anchorage point, such as that provided by a seven or ten-foot tripod should be available before work is commenced.
    iii. Full body harnesses, yokes, and wristlets can be used when retrieval is through narrow openings.

7. Strength Requirements
    a. All components of the fall protection shall meet the strength requirements of American National Standard A10.14-1991.

        Note: These strength requirements are based on one worker use. If multiple workers are tied off to a single lifeline, the strength requirement must be increased by the number of workers affected (i.e., two workers, one lifeline, minimum breaking strength must be 10,800 pounds at the center of line; three workers, one lifeline, minimum breaking strength must be 16,200 pounds, and so forth).
    b. When tied off while working on suspended scaffolding, each worker must use a separate line which is not connected to the scaffold.
    c. Hardware for body belts/harnesses and lanyards must be drop-forged, corrosion resistant with smooth edges, a minimum of 5,000 pound breaking strength without cracks or breaks.
    d. Knots shall not be used in components of a fall protection system since a knot will reduce the strength by at least 50%.
    e. Lanyards shall be kept as short as possible and in no case shall they exceed six feet to minimize the possibility for any length of a free fall.
    f. Wire rope or rope-covered wire lanyards shall not be used where impact loads are anticipated or where there is an electrical hazard.
    g. Belts and lanyards that have been subjected to impact loading shall be removed from service and destroyed or returned to the manufacturer for recertification.
    h. Rope lanyards shall not be stored in work pouches where they may be subject to deterioration.
    i. Where there is exposure to abrasion, spun nylon rather than filament nylon shall be used.
    j. Only safety belts/harnesses with locking snaps shall be used to prevent “rollout” or disengagement. All hardware shall be compatible with the locking snap.

k. Only shock-absorbing lanyards shall be used to reduce the fall arresting impact on the wearer.
l. Tongue-type buckles shall be used in lieu of friction buckles since friction buckles may lose the ability to stop detachment if contaminated with grease or oil.

8. Inspection and recordkeeping
    a. The user shall inspect the fall protection prior to each use.
    b. A trained and competent person shall inspect all components of protection device at least once each six month. The dates of this biannual inspection shall be recorded on a permanent tag attached to the harness.
    c. Every five years, the fall protection system shall be returned to the manufacturer for recertification.
    d. Any defective body belt/harness or lifeline shall be destroyed or returned to the manufacturer before use.
    e. Any unit subjected to impact loading shall be immediately removed from service and destroyed or sent to the manufacturer for recertification.
9. Road Worksite Protection
    a. Traffic Coning - Flagging must meet MUTCD's specifications. Maintaining a safe work area in street operations requires attention to coning and flagging. There are three parts to this operation that must be considered:
        i. Low-level warning (red head cones)
        ii. High-level warning when needed for heavy traffic flow (mast barriers)
        iii. "Feather off" the traffic flow around work projects.
    b. Coning operation must be adjusted to fit each varied condition faced to take full advantage of traffic conditions and terrain but the following minimum guide is recommended:

        In a 20 MPH area - Red Head Cone 40 feet
        In a 30 MPH area - Red Head Cone 80 feet
        In a 40 MPH area - Red Head Cone 140 feet

        Note: The above schedule is the absolute minimum standard for safety and should be extended wherever conditions permit. Slow or stopped equipment in traffic lanes must be flagged.
    c. Flagging (or Paddle): For the Flagger: Effective flagging is a critical part of any maintenance job that involves vehicular traffic. A good flagger uses assertive motions to control traffic. Supervisors and lead workers shall assure that all members of maintenance/construction crews are well versed in appropriate flagging techniques. All staff will have attended flagging school prior to the assignment.

CHAPTER 9. RESPIRATORY PROTECTION PROGRAM

Purpose

This written program establishes policies and procedures for the effective use of respirators to protect our employees from airborne contaminate exposures. These procedures are mandatory.

Applicable Legal Standard

Federal: 29 CFR 1910.134 “Personal Protective Equipment & Respiratory Protection”

Definitions

Air purifying - Air purifying respirators use chemical or mechanical filter cartridges to clean the contaminated air before it is breathed in by the wearer.

Air supplying - Air supplying respirators provide the wearer with uncontaminated breathing air, by use of an air compressor, tank, or cylinder.
Assigned protection factor (APF) - The workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

Canister or cartridge - A container wore on the respirator which contains a filter, sorbent or catalyst or a combination which removes specific contaminants from the air drawn through it.

Face piece - The main part of the respirator which fits tightly on the face and includes the headband, exhalation and inhalation valves and connection place for the canister or cartridges.
High efficiency particulate air filter (HEPA) - A type of filter that removes from the breathing air, 99.97% or more particles 0.3 μ in size or larger.

Maximum use concentration (MUC) - The maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance.
Note: The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

NIOSH - The National Institute of Occupational Safety and Health is a Federal Agency who conducts research and tests certain types of safety equipment, including respirators.

General Responsibilities

1. Supervisor: It is the direct responsibility of the supervisor to ensure the respiratory protection program is implemented and that all employees are trained on the use of respiratory protection. In addition, the supervisor is also responsible for the following things:
    a. Ensuring employees are trained on the use of respiratory protection.
    b. Conducting or seeing that a qualified employee or outside consultant provide employee training and respirator fit testing.

c. Serving as the Program Supervisor.
d. Maintaining written records on the emergency use respirator monthly inspections.
e. Maintaining the respirator protection written program.
f. Performing evaluations of the program.

2. Employees: Employees must follow all safety procedures as outlined in this program, OR-OSHA rules, and manufacturer's recommendations in regards to respiratory protection. Employees are required to inspect their equipment prior to each days use. To ensure that the equipment is functional. Any problems found with the equipment needs to be reported to your supervisor.
   *Particle filters will meet N, R, P95%, 99%, or 99.7% for dust only. If oil mists are present such as saw lubricants, cutting fluids or glycerin-based liquids then only R or P filter may be used.
   *HEPA is high efficient particle air filter (99.97%)
   a. Only the National Institute of Occupational Safety and Health (NIOSH) approved respirators have been selected for usage. These respirators have been chosen based on the type of hazard, needed level of protection and maximum use concentrations. Different sizes and styles of respirators are available.
   b. The specific selection will be based on the fit testing protocols to determine the best style for each employee to ensure proper fit and comfort.
3. Protection Factors
   We will use the assigned protection factors listed in Table 1 of the Federal OSHA Respiratory Protection Standard 29 CFR 1910.134 to select a respirator that meets or exceeds the required level of employee protection. When using a combination respirator (e.g., airline respirators with an air-purifying filter), employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used.
   a. Dust masks are considered to be filtering face pieces and are the same as a half-face piece respirator which are approved for 10 times the limits.
   b. The use life of each respirator or cartridges will vary depending on the job duties and actual time in use. Each respirator will have some limitations, thus the manufacturer's instructions and recommendations must be reviewed. Air purifying respirators (disposable dust mask, half or full face piece cartridge respirators) cannot be used in confined spaces where the environment may have less than 19.5% oxygen.

Lifespan of a Respirator

The useful life of each respirator or cartridges will vary depending on the job duties and actual time in use. Each respirator will have some limitations, thus the manufacturer's instructions and recommendations must be referred to. Air purifying respirators (disposable mask, half face piece cartridge respirators) cannot be used in confined spaces where the environment may have less than 19.5% oxygen or in hazardous chemical operations when the exposure levels are unknown.

Self-Contained Breathing Apparatus (SCBAs):

In the following operations, respirators are for use during an immediately dangerous situation to life and health (IDLH). SCBAs are for use during the following operations:

When entering IDLH environments.

SCBA: Air tanks should be refilled according to the maximum time use as specified on the tank.

Chemical Canister/Cartridge Respirators:

These respirators are vapor and gas-removing, using a cartridge attached to the face piece containing chemicals to trap or react with specific vapors or gases, and removes them from the air breathed.

1. The specific use time will be provided to each chemical cartridge user based on a concentration mathematical model calculation of estimated use time and chemical concentrations. This information will be specific to a job or operation. Your supervisor will provide specific information but a general policy on use time of respirators is to replace the respirator or cartridge when:
    a. Concentration mathematical model provides recommended end of service time.
    b. An odor or taste is detected.
    c. It becomes hard to breathe through.
    d. The cartridge or respirator is damaged.
2. HEPA Cartridge: The HEPA cartridges should be changed whenever the operator notes any additional breathing resistance.
3. Non-mandatory Dust Mask: Dust masks should be changed whenever the operator notes any additional breathing resistance.

There are a number of limitations in the use of chemical cartridge respirators, which are important to understand.

1. They do not supply oxygen and thus cannot be worn in oxygen-deficient atmospheres.
2. The respirators are designed for protection against specific gases or vapors. Thus users must take care that the proper cartridge is selected.
3. Cartridges can only be used for protection against contaminants with good warning properties (smell, taste, and irritation).
4. The cartridges are not approved for high concentrations of the contaminant.
5. Respirators must be protected from the atmosphere while in storage because they tend to pick up water vapor from the air and reduces the service life.

Respirators for Particulate Exposures

1. FILTER NOTATION
   The service life of filters in all three of the approval categories of filter efficiency degradation (N, R, and P-series) is limited by considerations of hygiene, damage, and breathing resistance. All filters should be replaced whenever they are damaged, soiled, or causing noticeably increased breathing resistance (e.g. causing discomfort to the wearer).
   R (for Resistant to oil) and P (for oil Proof) series filters can be used for protection against oil or non-oil aerosols. N (for Not resistant to oil) series filter should be used only for non-oil aerosols.
2. FILTER EFFICIENCIES
   Each of the filter series (N, R and P) have three filter efficiencies that can be selected. These are based on how efficient the filter is with particles down to 0.3 microns. They can be 95%, 99%, and 99.97% (labeled 100% and commonly called HEPA filters). For general wood dust and dust exposures 95% is effective. For paint spray mists the 99% filter with chemical cartridge are effective. For highly toxic dusts such as asbestos, lead, and silica the 99.97% (HEPA) filters are to be used.
    a. Dust masks also are available in each of these filter types and efficiencies.
3. APPROVAL NOTATION
   Each respirator container for particle exposure protection now has a new TC (testing & certification) number. The label will read TC-84A-00X. The 84A notes that this is a particulate filter that does not

have any approval for use in atmospheres containing less than 19.5% oxygen. Additional limitations are provided on the label that the user needs to understand

4. FITLER REPLACEMENT TIME
   If the environment has high dust exposure (loading 200 mg) through the day's use then all the filters need to be replaced after 8 hours or less usage.

   If the R-series are used with oil exposures they need to be replaced after 8 hours of service time. P-series is limited only by the hygiene, damage, and breathing resistance if the exposures are not high.
5. SUMMARY OF MAJOR LIMITATIONS
   a. Mechanical filters do not provided oxygen, so they must not be used in oxygen-deficient atmospheres.
   b. They provide no protection against gases or vapors.
   c. There is a pressure drop through the filter medium; therefore, there is some breathing resistance.

Use and Availability of Respirators

1. Employees that are required to wear respirators shall wear an approved respirator selected for the work task exposure hazard. The respirator needs to be properly fitted at all times while in use.
2. Employees required to wear a respirator shall be provided a respirator issued by the supervisor with proper replacement parts, cartridges and filters, and cleaning materials as appropriate. The supervisor is responsible to see that employees are provided respirators that are required by this policy.
3. The disposable respirators (dust masks) are available from the parts room or from the supervisor. These are to be used for low level dust exposures and are non-mandatory (voluntary) functions. Employees need approval to use these respirators to ensure that they have received proper training and understand the maintenance and use of the dust mask.

Medical Surveillance for Respirator Assignment

1. Purpose of Medical Evaluations
   a. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Therefore, medical evaluations are required for all employees who wear a respirator. These medical evaluations determine the employee's ability to use a respirator before they are fit tested or use it on the job.
   b. OSHA applies this standard if the air contaminate level, conditions could result in overexposures to the permissible exposure limit, or if the worker voluntarily wears the respirator. The voluntary use of dust mask does not require medical evaluation, but does required basic information about the respirator to be provided.
   c. The follow-up medical examination will include any medical tests, consultations, or diagnostic procedures that the physician deems necessary to make a final determination, at no cost to the employee.
2. Medical Certification
   Medical certification of an employee is required for respirator use by Federal OSHA 29 CFR 1910.134. The purpose of a medical evaluation is twofold:
   a. To determine if an individual is medically fit to wear a respirator.
   b. To determine if an individual needs work restrictions, given the job that he or she is required to do.

Note: Job descriptions or job capacity evaluations need to be available to the physician or licensed healthcare professional (LHCP) doing the evaluation.

3. Administration of the Medical Questionnaire and Examinations
   The medical questionnaire and examinations will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.
   a. Employees will have the opportunity to discuss the questionnaire and examination results with the physician or LHCP.
4. Additional Medical Evaluations
   Additional medical evaluations will be provided under the following conditions:
   a. An employee reports medical signs or symptoms that are related to their ability to use a respirator.
   b. A physician, manager, or HR representative will inform the supervisor that an employee needs to be re-evaluated.
   c. Information from the respiratory protection program, including observations made during fit testing and program evaluation that indicates a need for employee re-evaluation.
   d. A change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on an employee.
5. Retention of Medical Records
   Preservation of medical records is required to be followed per Federal OSHA 29 CFR 1910.20 (d) Access to Employee Exposure and Medical Records. This requires that the records be retained for 30 years plus employment duration. The medical records are kept by the evaluating physician and the medical clearance form is kept in a confidential personnel file, if the employee signs the medical release form.

   If an employee works for one year or less the rules allow an employer to give the employee his/her records and not retain them. If they are not given to the employee then the 30-year retention time is in effect per the OR-OSHA requirements.

Training of Employees

1. Each mandatory respirator wearer will receive initial training prior to being assigned work that requires use of a respirator, and will receive annual training thereafter.
2. Each non-mandatory respirator wearer will receive information about the respirator in terms of protection limits, how to wear and when to dispose of the mask or change cartridges.
   a. The non-mandatory respiratory users will also be provided the basic information on respirators.

Training for Mandatory Respirator Users

The mandatory wear training includes the following training topics:

1. Contents of the written program and where it is located.
2. Respiratory hazards to which they are potentially exposed to.
3. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
4. How to don and doff the respirator.
5. Respirator use and limitations.
6. Cleaning, maintenance, and storage.
7. How to recognize medical signs and symptoms that limit effective use of a respirator.

8. How to inspect a respirator.
9. Field fit tests (positive and negative pressure tests).

The supervisor will keep the training records. Each user must understand and apply the contents of this respirator program to the daily use, care and storage of the equipment. Written training materials are available from the supervisor, or in the Safety Manual.

Fitting Of Respirators

Respirator fit is extremely important. Respirator fit testing is used to test how well the tight fitting respirator face piece seals against the face. If there is not a good face-to-face piece seal, the contaminants may pass around the face piece and be breathed into the lungs.

It is important to realize that not everyone can wear a respirator. OR-OSHA specifically states that you should not wear a respirator if:

1. You wear glasses that break the skin to mask seal (inserts are available).
2. You have facial hair passing between the sealing surface of the respirator and the face.
3. You are unable to get an adequate fit on a respirator.
4. Your physician finds you unfit medically to wear the respirator.

Respirator fit testing may be done using two basic methods: qualitative or quantitative. Most employers use qualitative methods since quantitative procedures may be expensive and require complicated equipment. Currently only certain rules required quantitative fit testing. These include lead and asbestos regulations once exposure levels reach a certain exposure level.

Positive and Negative Pressure Tests

Each time a respirator is put on, and prior to the qualitative fit testing procedures, the wearer should conduct a positive and a negative pressure test to ensure that the respirator is seated correctly against the face.

The negative pressure test is performed on any respirator with a tight fitting face piece. For cartridge respirators, the test consists of covering the air inlet lightly and inhaling lightly, then holding the breath for a few seconds. The common leak areas are around the nose and chin.

The positive pressure test is performed on respirators with tight fitting face pieces and both inhalation and exhalation valves. It is done by blocking the exhalation valve and exhaling lightly. Again, air leakage can be felt if a leak is evident.

1. If such leaks are found, the respirator should be adjusted and retested. If a fit cannot be achieved, then a different size or style face piece needs to be fitted.

Fitting of SCBA Respirators

Fit testing of air supplying respirators will be done using the same qualitative fit test protocols as used for the air purifying respirators. SCBA face pieces used for fit testing will have cartridge sampling adapters so the face piece can be worn and tested in the negative pressure mode.

Qualitative Fit Test Methods

Qualitative Fit Testing: Done with test agents. This test protocol will be used for all types of respirators.

1. Banana Oil (isoamyl acetate) Test:

Air purifying respirators must be equipped with organic vapor or pesticide cartridges for this test. The test chemical smells like ripe bananas. The test consists of administering the chemical and having the respirator wearer determine whether or not he/she can smell the odor of bananas.

The banana oil test has certain disadvantages. Some individuals cannot smell the banana oil, so you need to test the individual after you have performed the fit test to ensure that they can indeed detect the odor. Also, if an individual smells higher concentrations of the banana oil, they can develop an odor fatigue and upon immediate retesting, may not be able to detect the material.

2. Irritant Smoke Test:
   Smoke tubes (stannic oxichloride smoke tubes) used to test ventilation systems can also be used as an effective chemical to test a respirator wearer's fit. This test can be used for half or full face air purifying respirators. The respirators must be equipped with high efficiency (HEPA) cartridge filters before starting the test.

   Since the chemical used to produce the smoke is irritating to the eyes and mucous membranes, additional care has to be taken in conducting this type of fit test. Smoke tubes are available from safety equipment supply stores.

   PRIOR TO FIT-TESTING AN EMPLOYEE MUST PASS THE MEDICAL EVALUATION. Employees not capable of wearing a negative pressure respirator will not be assigned job tasks requiring respirator use.

   Proper fitting of respirators is essential if employees are to receive the necessary protection from the airborne contaminate hazards. Air, which passes around the face piece of the respirator, rather than through it, is not being filtered. In order to ensure that a good face seal can be achieved, the respirator needs to be carefully fitted.

3. The following protocol will be followed to fit the initial wearer and then to be used each time the respirator is used:
   a. The respirator straps must be worn in the correct place. Adjust the headband until they are tight yet comfortable.
   b. To adjust the face piece properly, simply position the chin firmly in the chin cup and manually shift the face piece until the most comfortable position is located. Make the final adjustments on the headbands and do not break the nose seal.
   c. A positive and negative pressure test needs to be performed every time a respirator is worn.
   d. The negative pressure test is performed on a half or full-face piece respirator designed for filters or chemical cartridges. The test consists of covering the air inlet lightly and inhaling slightly. If a leak exists, the air can be felt as it enters. The common leak areas are around the nose and chin.
   e. The positive pressure test is performed by blocking the exhalation valve and exhaling lightly. Again, air leakage can be felt if a leak is evident. If such leaks are found, the respirator is to be adjusted and retested.
   f. If a fit cannot be achieved, then a different size or style face piece needs to be fitted.

Maintenance of Respirators

Respirators are to be cleaned after each day's using appropriate cleaning agent similar to (commercial simple green-antiseptic) or products approved by the manufacturer and then placed dry in a clean container or plastic bag for storage. More thorough cleaning is needed for dirty respirators or those shared which involves performing the following procedure:

1. Remove the cartridges or filters from the face piece. The filters and cartridges must not be washed. All cartridges will be replaced during the weekly cleaning for respirators used infrequently through the week. Respirators used in environments with high concentrations of air contaminants may need to have the cartridge changed daily or more frequently.
2. Immerse the respirator face piece in a warm water solution of commercial disinfectant liquid. The respirator should be scrubbed gently with a cloth or soft brush. Make sure that all foreign material is removed from all the surfaces of the rubber exhalation valve and plastic exhalation valve seats and face seal.
   Note: The inhalation, exhalation valves, and valve cover should be replaced during the quarterly cleaning or at manufacturer's recommendations schedules.
3. After washing and disinfecting the respirator, rinse in clean warm water and allow the respirator to air dry before storing.
4. After the respirator is dry, store it in a clean container. Respirators should not be stored where chemicals are used or stored. Respirators should not be hung from nails on the walls or in chemical storage areas. The respirators must be stored in a normal position which means that they should not be stretched or stored under objects which could cause the face-piece to become warped.
5. Any respirator malfunction shall be reported to your supervisor who can evaluate the problem and ensure that proper replacement parts or a new respirator is supplied to the employee.

Respirator Inspection

Each person assigned a respirator shall be responsible to maintain the equipment and routinely inspect the respirator before and after use for worn or dirty parts. WORN PARTS WILL BE REPLACED IMMEDIATELY.

Each person assigned to use a respirator shall maintain and routinely inspect it before and after use each use. The inspection shall include:

Air-purifying Respirators:

1. Check face piece for:
   a. Dirt
   b. Cracks
   c. Tears
   d. Holes
   e. Distortion
2. Check head straps for:
   a. Breaks
   b. Tears
   c. Loss of elasticity
   d. Broken buckles or attachments

SCBA's and Airline Systems:

SCBA's and airline systems used routinely are to be checked after each use. Those used for emergency or infrequently need to be checked monthly. The checks are to assure that the

equipment is kept clean and in proper working condition. The respirator inspection shall include an evaluation of:

1. Tightness of the connections.
2. Condition of the face piece.
3. Condition of the headbands.
4. Condition of the cartridges or tank pressure.
5. Condition of the valves.
6. Pliability and cleanliness of the face piece material.

Respirator Program Evaluation

It is important that both the respirator wearer and our managers evaluate respirator use and program effectiveness. It is critical that the appropriate respirator be worn correctly.

If an employee notices any of the following they are to immediately leave the area and replace the respirator if:

1. Breathing becomes difficult.
2. Dizziness or other distress occurs (see your supervisor immediately).
3. You sense irritation, smell or taste contaminants.
4. The respirator becomes damaged.

The overall program will be evaluated by the supervisor. This will involve:

1. Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
2. Regularly consulting employees required to use respirators to assess the employee's views on program effectiveness and to identify any problems.
3. Factors to be assessed include, but are not limited to:
   a. Respirator fit.
   b. Appropriate respirator selection for the hazards.
   c. Proper respirator use.
   d. Proper respirator maintenance and inspections.

The supervisor will evaluate the program as needed to determine the overall effectiveness of the program and needed updates. If deficiencies are found, then additional employee training will be given and more frequent evaluations will be made.

Respiratory Protection Program Action Plan Summary and Forms

This chart describes the respiratory program's responsibilities and identifies appropriate forms to be used as part of the respiratory protection program and evaluation.

Action	Responsibility	Form
Employee is assigned mandatory respirator use job functions and wears full or ½ face piece respirator.	Supervisor	OSHA medical questionnaire for medical evaluation.

The questionnaire is forwarded to the contract medical evaluator.	Supervisor sends questionnaire and based on evaluation, schedules a medical exam for the employee.	Sends appointment memo to employee regarding scheduled medical evaluation (in house memo or email).
Medical evaluation and medical clearance.	Supervisor receives medical clearance and schedules fitting and fit testing with employee.	Fit-Test Record (may be done by a qualified employee, supplier or outside consultant).
Employee completes Respirator Training.	Supervisor provides or schedules training.	Respirator Training Record.
Respirator program evaluation.	Supervisor periodically evaluates respirator conditions, use, and employee's understanding of program.	Respirator program periodic checklist.
Tracking employee for annual retraining and fit testing. Follows up on medical evaluation retest requirements per LHCP.	Manager	Maintains a data log to ensure that employees are re-fit and trained annually. Proper follow-up on medical evaluations.

CHAPTER 10. LABORATORY SAFETY AND CHEMICAL HYGIENE POLICY AND PROCEDURES

Purpose

The purpose of the laboratory safety and chemical hygiene policy and procedures is to prevent injury to water and waste water laboratory workers who use chemicals and to protect others who may be exposed to hazards from the laboratory and the environment. Also, to comply with OR-OSHA Regulations, "Occupational Exposures to Hazardous Chemicals in Laboratories."

Applicable Legal Standards

Federal: 29 CFR 1910.1450 and 106, NFPA # 30-40
State: OAR 437, Division 2., Subdivision Z., "Toxic and Hazardous Substances"

Scope

This standard applies to all laboratories that use hazardous chemicals in accordance with the definitions provided in 29 CRF 1910.1450. In general, the standard requires the formulation and implementation of a Chemical Hygiene Plan (CHP), which should include the necessary work practices, procedures, and policies to ensure that employees are protected from all potentially hazardous chemicals.

Procedure

General Supervisory Practices: The supervisor has overall safety responsibility for maintaining a safe laboratory working environment. The laboratory supervisor shall insure.

1. That proper safety procedure is in place to protect his/her laboratory staff.
2. Workers know safety rules and procedures and follow them.
3. Adequate emergency equipment in proper working order is available.
4. Training in use of emergency equipment and safety procedures has been provided.
5. Information on special or unusual hazards and non-routine work has been distributed to the laboratory workers.
6. Routine safety inspections are conducted.
7. An appropriate safety orientation has been given to individuals when they are first assigned to the laboratory.
8. A copy of this plan has been made available to all lab employees.
9. Prior approval from the Laboratory supervisor shall be obtained before working with any new chemicals or new procedures. Planning for work with such materials will provide for disposal, spill prevention, and control.

Laboratory Personnel General Safety Rules

1. Know the safety rules and procedures that apply to the work being done (contained in this document). Determine the potential hazards (i.e., physical, chemical, biological) and appropriate precautions before beginning any new operation (see MSDS).
2. Know the location of and how to use the emergency equipment in your area, as well as how to obtain additional help in an emergency, and be familiar with emergency procedures.
3. Know the types of protective equipment available and use the proper type for each job.
4. Be alert to unsafe conditions and actions and call attention to them so that corrections can be made as soon as possible. Someone else's accident can also be dangerous.
5. Do not consume food or beverages or smoke in areas where chemicals are being stored.

6. Avoid hazards to the environment by following accepted waste disposal procedures. Chemical reactions may require traps or scrubbing devices to prevent the escape of toxic substances.
7. Be certain all chemicals are correctly and clearly labeled. Post warning signs when unusual hazards, such as radiation, laser operations, flammable materials, biological hazards, or other special problems exist.
8. Remain out of the area of fire or personal injury unless it is your responsibility to respond to the emergency. Curious bystanders interfere with rescue and emergency personnel and endanger themselves.
9. Avoid distracting or startling any other worker. Practical jokes or horseplay will not be tolerated at any time.
10. Use equipment only for its designated purposes.
11. Position and clamp reaction apparatus thoughtfully in order to permit manipulation without the need to move the apparatus until the entire reaction is completed. Combine reagents in appropriate order, and avoid adding solids to hot liquids.
12. Think, act, and encourage safety until it becomes a habit!

Laboratory Health and Hygiene

1. Wear appropriate eye and face protection at all times.
2. Use protective apparel, including face shields, gloves and other special clothing or footwear as needed.
3. Confine long hair and loose clothing when in the laboratory.
4. Do not use mouth suction to pipet chemicals or to start a siphon; a pipet bulb or an aspirator should be used to provide a vacuum.
5. Avoid exposure to gases, vapors, and aerosols. Use appropriate safety equipment whenever such exposure is likely. Most often this can be done by using the fume hood.
6. Wash well before leaving laboratory area, eating, drinking, or smoking. Avoid the use of solvents for washing the skin (they remove natural protective oils from the skin and can cause irritation and inflammation. In some cases, washing with solvent might facilitate absorption of a toxic chemical).

Laboratory Housekeeping

1. Work areas shall be kept clean and free from obstructions. Clean-up should follow the completion of any operation or at the end of each day.
2. Waste should be deposited in appropriate receptacles.
3. Spilled chemicals should be cleaned up immediately and disposed of properly.
4. Unlabeled containers and chemical waste should be disposed of promptly. Other materials or chemicals no longer needed should not accumulate in the laboratory.
5. Floors should be cleaned regularly; accumulated dust, chromatography absorbents, and other assorted chemicals pose respiratory hazards.
6. Access to exits, emergency equipment, controls, and such should never be blocked.
7. Equipment and chemicals should be stored properly; clutter should be minimized.

Shield Use for Safety (Shall be used):

1. For any operation having the potential for explosion.
2. Whenever a reaction is attempted for the first time.
3. Whenever a familiar reaction is carried out on a larger than usual scale.
4. Whenever operations are carried out under non-ambient conditions.
   Note: Shields must be placed so that all personnel in the area are protected from the hazard.

Proper Handling of Glassware

1. Careful handling and storage procedures should be used to avoid damaging glassware. Damaged items should be discarded or repaired.
2. Hand protection should be worn when inserting glass tubing into rubber stoppers or corks or when placing rubber tubing on glass hose connections. Tubing should be held close together to limit movement of glass should a fracture occur.
   Note: If possible, use plastic or metal connectors.
3. Vacuum-jacketed glass apparatus should be handled with extreme care to prevent implosions. Only glassware designed for vacuum work should be used.
4. Hand protection SHALL be worn at all times when picking up broken glass.

Working with Flammable Hazards

1. Do not use an open flame to heat a flammable liquid or to carry out a distillation under reduced pressure.
2. Use an open flame only when necessary and extinguish it when it is no longer needed.
3. Before lighting a flame, remove all flammable substances from the immediate area. Check all containers of flammable materials in the area to ensure that they are tightly closed.
4. Notify other occupants of the laboratory in advance of lighting a flame.
5. Store flammable materials properly (using a flammable storage cabinet when quantities necessitate their use).
6. When volatile flammable materials may be present, use only non-sparking electrical equipment.

Working With Cold Traps and Cryogenic Hazards

1. Always use gloves and a face shield when preparing or using cold baths (severe burns if allowed to contact the skin).
2. Never use liquid nitrogen or liquid air to cool flammable mixtures in the presence of air because oxygen can condense from the air, causing an explosion.
3. Always wear dry gloves when handling dry ice. Never lower head into dry ice chest; carbon dioxide is heavier than air, and suffocation can result.

Working Alone and Unattended Operations

Note: The supervisor has the responsibility to determine whether the work requires special safety precautions.

General Ventilation

1. All hazardous/toxic chemicals identified by OR-OSHA, Subpart Z., shall be used so that quantities of their vapors or dusts do not produce adverse toxic effects from entering the general laboratory atmosphere. Whenever feasible, a hood should be used when working with Subpart Z. chemicals. The established PEL (Permissible Exposure Limit) shall not be exceeded.
2. Operations such as running reactions, heating or evaporating solvent, and transfer of chemicals from one container to another should be performed in the safest manner possible.

Chemical Procurement, Distribution, and Storage

1. Prior to ordering any new chemical/substance, the MSDS should be reviewed for the following:
   a. Potential hazards.
   b. Safe handling procedures and methods.
   c. Waste disposal procedures.

d. Proper personal protective equipment.

Note: This information can be obtained from the label, manufacturer's insert, or the MSDS.

2. When turning in a requisition in, the requestor shall inform the supervisor of any hazards associated with the chemical or substance (i.e., attach MSDS to requisition).
3. All chemical/substances shall be received in a central location to aid in monitoring the chemical that may eventually enter the waste disposal stream. All chemicals identified under OR-OSHA Subpart Z shall be inventoried and quantities (gal., lbs., etc.) of chemical/substance recorded.
4. No container of a chemical or substance shall be stocked unless an MSDS accompanies the product.
    a. Material Safety Data Sheet (MSDS) or satisfactory container label must be written in English and shall contain:
        i. Chemical Identity
        ii. Manufacturer's Information
        iii. Hazardous Ingredients/Identity Information
        iv. Physical/Chemical Characteristics
        v. Fire and Explosion Hazard Data
        vi. Reactivity Data
        vii. Health and Hazard Data
        viii. Precautions of Safe Handling and Use
        ix. Control Measures
        x. Primary Routs of Entry (Inhalation, Absorption, etc)
        xi. Emergency and First Aid Procedures
5. If chemicals have been stored beyond their appropriate shelf life or have deteriorated, they shall be properly disposed of immediately.

Procedures for Storing Chemicals

1. Annual audits shall be conducted for the purpose of inspecting:
    a. Chemicals stored beyond their appropriate shelf life or have deteriorated.
    b. Containers that have defaced or questionable labels.
    c. Containers that are leaking or have corroded caps.
    d. Containers that have developed any other problems and should be disposed of in a safe manner.

    Note: A first-in, first-out system of stock keeping/chemical use should be instituted.

Procedures for Storing Chemicals in Laboratories

1. General Considerations:
    a. Every chemical in the laboratory should have a specific use, definite storage place, and should be returned to that location after each use.
    b. Storage of chemicals on bench tops and hoods is forbidden.
    c. Laboratory refrigerators shall be properly labeled as to their appropriate use (such as for the storage of chemicals only); food must not be placed in them. All containers placed in the refrigerator should be properly labeled (identification of contents and owner, date of acquisition or preparation, and nature of any potential hazard).
    d. Flammable liquids should not be stored in a laboratory refrigerator unless the unit is an approved, explosion-proof, or laboratory-safe type.
    e. Chemicals stored in the laboratory should be inventoried periodically, and at the same time, containers that have illegible labels and chemicals that appear to have deteriorated should be disposed of.
2. Flammable Liquids

a. Quantities of flammable liquids greater than one liter should be stored in approved containers (portable approved safety cans are one of the safest methods of storing flammable liquids).
b. Flammable liquids received in large containers should be repackaged into safety cans for distribution to laboratories; such cans must be properly labeled to identify their contents.
c. Other considerations in the storage of flammable liquids in the laboratory include ensuring that aisles and exits are not blocked in the event of fire; that accidental contact with strong oxidizing agents such as chromic acid, permanganates, chlorates, per chlorates, and peroxides is not possible; and that sources of ignition are excluded. Note: See Federal OSHA 29 CFR 1910.106, NFPA No. 30-45 for further information and requirements.

3. Toxic Substances:
    a. Chemicals known to be highly toxic, including those classified as carcinogens, should be stored in ventilated storage areas in unbreakable chemically resistant secondary containers.
    b. Only minimum working quantities of toxic materials should be present in the work area. Storage vessels containing such substances should carry a label such as the following:
        CAUTION: HIGH CHRONIC TOXICITY OR CANCER SUSPECT AGENT
    c. Storage areas for substances that have high acute or chronic toxicity should exhibit a sign warning of the hazard, have limited access, and are adequately ventilated.
    d. A current inventory of toxic materials should be maintained.
    e. Adequate ventilation must be maintained for hazardous materials that have a high vapor pressure (mercury and mercaptans).
4. Compressed Gases:
    a. Cylinders of compressed gases should be securely strapped or chained to a wall or bench top prevent their being knocked over accidentally.
    b. When they are in use, it is good practice to keep them capped.
    c. Care should be taken to keep them away from sources of heat or ignition.

Inspections

1. Shall be conducted quarterly beginning each calendar year.
2. Shall be documented in the lab safety manual.
3. Deficiencies shall be corrected immediately and noted on the inspection sheet or Safety Committee minutes.

Maintenance

1. All eye washes and safety showers shall be checked monthly for adequate water flow and to insure cleanliness of the water.
2. Fire extinguishers shall be inspected monthly with date and initials on back of tag and annually to insure they are full and operating properly.
3. Fume hoods and other equipment should be inspected at least monthly to assure proper operation.

First Aid and Emergencies

1. Anticipated Emergencies:
    a. Thermal and chemical burns.

b. Cuts and puncture wounds form glass or metal, including possible chemical contamination.
c. Skin irritation by chemicals.
d. Poisoning by ingestion, inhalation, or skin absorption.
e. Asphyxiation (chemical or electrical).
f. Injuries to the eyes from splashed chemical.

2. Accident Reporting:
    a. Follow lab Emergency Medical Plan.
    b. Notify supervisor and fill out appropriate forms immediately.
3. Fires and Explosions:
    a. Alert all laboratory personnel and call 9-911 for assistance.
    b. If authorized and trained in the use of portable fire extinguishers, try to extinguish fire immediately by:
        i. Using correct fire extinguisher.
            1. Class A Fire: ordinary combustible solids such as paper, wood, coal, rubber, and textiles.
            2. Class B Fire: petroleum hydrocarbons (diesel fuel, motor oil, and grease), volatile flammable solvents.
            3. Class C Fire: electrical equipment.
            4. Class D Fire: combustible or reactive metals (sodium and potassium), metal hydrides, or organ metallic.
    c. Avoid entrapment in a fire; always fight a fire from a position accessible to nearest exit.
    d. If the fire cannot be controlled by available staff and equipment, the following action should be taken:
        i. Call 9-911 or pull fire alarm.
        ii. Assist injured personnel.
        iii. Confine the emergency (close hood sashes, door between laboratories, fire doors) to prevent further spread of the fire.
        iv. Evacuate the building to avoid further danger to personnel.
    e. In case of explosion, **immediately**:
        i. Call 9-911 or pull fire alarm.
        ii. Turn off burners and other heating devices, if possible.
        iii. Stop reactions in progress.
        iv. Assist in treating victims.
        v. Vacate the area until it has been decontaminated.
4. First Aid:
    a. Employees where necessary should be trained in emergency first aid, pulmonary and cardiac resuscitation and AED's if one is located on the premises.
    b. Refresher training shall occur as required by your employer's Emergency Medical Plan or every other year.
    c. Training records shall be documented and retained for a minimum of five years.

Medical Consultation and Medical Examinations

1. All employers who work with hazardous chemicals shall be given an opportunity to receive medical attention, including any follow-up examinations required, under the following conditions:

a. Development of signs or symptoms associated with a hazardous chemical to which they may have been exposed.
b. When exposure monitoring reveals an exposure to an OR-OSHA regulated substance routinely above the action level or PEL.
c. Whenever an event takes place such as a spill, leak, explosion, or other occurrence resulting in the likelihood of a hazardous exposure.

2. All medical examinations or consultations shall be by, or under the supervision of, a licensed medical provider and shall be provided without cost or loss of pay, and at a reasonable time and place.
3. The employer shall provide to the medical provider.
    a. The identity of the hazardous substance and/or the MSDS.
    b. Description of the conditions causing the exposure, including quantitative exposure data if available.
    c. Any medical condition which may be revealed which might place the employee at increased risk as a result of exposure to a hazardous substance in the workplace.

Records

1. Accident records shall be written and retained.
2. In work with chemicals of moderate, chronic or high acute toxicity, records shall indicate amounts of these materials on hand, amounts used, and the names of the workers involved.
3. Medical records or copies thereof shall be retained in accord with state and federal regulations.

Signs and Labels

1. Emergency telephone numbers to be called in the event of fire, accident, flood, or hazardous chemical spill shall be posted in the laboratory.
2. When possible, labels on containers of chemicals shall contain information on the hazards associated with the use of the chemical. Waste containers are labeled for the type of waste that can be safely deposited.
3. Signs will be posted to show the locations of safety showers, eyewash stations, exits, and fire extinguishers. Extinguishers are labeled to show the type of fire for which they are intended.
4. Laboratory areas that have special or unusual hazards shall be posted with warning signs at the entrance. Standard signs and symbols have been established for a number of special situations such as radioactivity hazards, biological hazards, fire hazards, and laser operations.

Spills and Accidents

1. A written emergency plan shall be prepared for the unexpected event such as fire or explosion. The plan shall identify procedures for evacuation, shutdown, return, start-up, and drills.
2. A spill control policy shall be developed which will include consideration of:
    a. Prevention: Storage, operating procedures, monitoring, inspection, and personnel training.
    b. Containment: Engineering controls on storage facilities and equipment.
    c. Clean-up: Countermeasures and training of personnel to help reduce impact of a chemical spill.
    d. Reporting: Provisions for internal and external reporting (e.g., to state and federal agencies).
3. All accidents or near accidents shall be analyzed and the results of such analyses and recommendation for the prevention of similar occurrences shall be distributed to all who might benefit.

Information and Training Program

The laboratory safety training program was developed to assure that all individuals at risk are adequately informed about the work in the laboratory, its risks, and what to do if an accident occurs. Educational activities will be provided for all persons who may be exposed to potential hazards in connection with laboratory operations. New employees assigned to the laboratory will be educated about safety procedures and the procedures to use in the event of accident.

1. Emergency and Personal Protection Training:
   Instruction on the proper use of protective apparel and safety equipment, emergency procedures, and first aid shall be available to everyone who might need it. Full-time staff will be trained in the proper use of emergency equipment and procedures. Receiving room, storeroom, and stockroom personnel will be knowledgeable about or trained in the handling of hazardous substances. Such training shall include the physical handling of containers of chemicals so that they are not dropped, bumped, or subject to crushing by being piled one upon another. Information shall be provided about environmental and hazard initiating exposures that must be avoided. Some of the more common items with which receiving room, storeroom, and stockroom personnel will be familiar include the following:
   a. The use of proper material-handling equipment, protective apparel, and safety equipment.
   b. Emergency procedures, including proper clean-up of spills and the disposal of broken containers.
   c. The meanings of the various DOT (Department of Transportation) labels on shipping packages and containers.
   d. The proper methods of material-handling and storage, especially the incompatibility of some common substances; the dangers associated with alphabetical storage; and the sensitivity of some substances to heat, moisture, and other storage hazards.
   e. The special requirements of heat-sensitive materials, including those shipped refrigerated or packed in dry ice.
   f. The problems associated with compressed gases, including unique situation such as the construction of an acetylene cylinder.
   g. The hazards associated with flammable liquids (especially the danger of their vapors catching fire some distance from the container) and explosives and of toxic gases, vapors, and oxygen displacement.
   h. Substances that react with water, giving rise to hazardous conditions (e.g., alkali metals, burning magnesium, metal hydrides, acid chlorides, phosphates, and carbides).
   i. The federal and state regulations governing controlled substances such as radioactive materials, drugs, ethyl alcohol, explosives, needles and syringes.
   j. Chemicals that have offensive smells.
   k. Packages that exhibit evidence that the inside container has broken and leaked its contents.
2. Frequency of Training:
   Training and education shall be regular, continuing activities. The employer shall determine the frequency of refresher information and training.
3. Literature and Consulting Advice:
   Literature and consulting advice on laboratory safety and on the physical and biological hazards of chemicals shall be readily available to those responsible for laboratory operations and those actually involved. Laboratory workers shall be encouraged to read about the potential hazards

of the work going on in their laboratory and to know about the availability of various resources that describe safe operating conditions. This literature shall be available in a form that is readily accessible both to those responsible for laboratory operations and to laboratory workers themselves.

Waste Disposal Program

Chemicals shall be dispensed of in such a way that people, other living organisms, and the environment generally are subjected to minimal harm by the substances used or produced in the laboratory. Both the laboratory workers and the supporting personnel shall know and use acceptable disposal methods for various chemicals.

1. Content:
   The waste disposal program specifies how waste is to be collected, segregated, stored, and transported, and includes consideration of what materials can be incinerated. Transport form the institution will be in accordance with DOT regulations.
2. Discarding Chemical Stocks:
   Unlabeled containers of chemicals and solutions shall undergo prompt disposal. If partially used, they shall not be opened.
3. Frequency of Disposal:
   Waste shall be removed from laboratories to a central waste storage area at least once per week and from the central waste storage area at regular intervals.
4. Method of Disposal:
   a. Incineration in an environmentally acceptable manner is the most practical disposal method for combustible laboratory waste.
   b. Disposal by recycling or chemical decontamination shall be used when possible.
   c. Indiscriminate disposal by pouring waste chemicals down the drain or adding them to mixed refuse for landfill burial is unacceptable.
   d. Hoods will not be used as a means of disposal for volatile chemicals.

OAR 437, DIVISION 2. SUBDIVISION Z. AIR CONTAMINANTS

This is a short list abstracted from Subdivision Z that contains the substances that are possibly found in a laboratory that tests water or wastewater. If you have any of these stored or used on site, obtain more information from OR-OSHA:

Acetic Acid
Acetone
Ammonia
Arsenic
Arsine
Barium compounds
Benzene
Bromine
Butane
Butyl alcohols
Cadmium compounds
Calcium carbonate
Calcium hydroxide
Calcium oxide
Calcium sulfate
Carbon dioxide
Chlorine
Chromic acid and chromates
Chromium II and III compounds
Cyanides
Ethanol
Fluorides
Formaldehyde
Hydrogen chloride
Hydrogen peroxide
Hydrogen Sulfide
Iodine
Isobutyl alcohol
Ketone
Lead inorganic compounds
Manganese compounds
Mercury vapor or compounds
Methyl alcohol
Methylene chloride
Nickel compounds
Nitric acid
Nitrous oxid
Oxalic acid
Phenol
Phosphoric acid
Potassium hydroxide
Pyridine
Selenium compounds
Silver compounds
Sodium azide
Sodium hydroxide
Starch
Strychnine (Brucine Sulfate)

Sulfuric acid
Sulfur dioxide
Trichloroethylene
Toluene
Xylenes

CHAPTER 11. ASBESTOS MAINTENANCE PROGRAM

Purpose

The purpose of this program is to ensure compliance with OR-OSHA Asbestos Standard. We have asbestos containing building materials which require that a basic asbestos program be maintained. The elements of a program include:

1. Procedures for periodic examination of asbestos-containing materials to detect deterioration and need for repair or proper removal.
2. Written procedures for handling asbestos materials during maintenance and renovation activities.
3. Procedures for proper asbestos waste disposal.
4. Procedures for dealing with asbestos-related emergencies.
5. General asbestos awareness training will be provided to all of our staff who may come into contact with asbestos.

Note: This program does not meet DEQ asbestos worker training certification requirements nor is it intended to meet all possible OR-OSHA Asbestos Requirements.

Applicable Legal Standards

Federal: 29 CFR 1926.1101
State: OAR 437 – Division 3

Procedures for Conduction Asbestos Building Inventories

1. TESTING:
    a. While many of our building materials have been tested, not all material may have been, thus it is our policy to test any of the following suspect building materials prior to removal.
        i. Pipe Insulation Materials.
        ii. Floor Tiles and Mastic (tiles, mastic for molding, mastic for tiles or carpeting).
        iii. Sprayed on Asbestos containing ceiling materials.
        iv. Asbestos Containing Pipe.
2. Asbestos material inventory results are maintained by facility maintenance and are available for review. The inventories are done individually for each building.

Inspection Procedures

1. Outside asbestos abatement and inspection contractors who have asbestos certified staff have taken samples and either repaired or properly removed asbestos containing materials.
    a. The maintenance staff is expected to note the condition of asbestos insulation and ceiling materials as part of their routine building maintenance. If upon visual inspection material is cracking, fraying, broken, or damaged they will report this to the Facility Manager.
    b. Custodial staff is to immediately report broken insulated pipes and any broken or friable materials labeled as asbestos to their supervisor immediately.
    c. If necessary, an asbestos abatement/inspection contractor's certified supervisor will determine the scale of the work. The work will be done by outside asbestos contractor(s). The asbestos supervisor will discuss interim measures necessary to protect all personnel that may be exposed to the material with management.

Re-inspection

Re-inspection of all visible asbestos materials will be done by certified asbestos contractors based on frequency noted in the previous inspection report.

Notice to All Building Occupants

Any damage to pipe insulation or other building surfaces and materials is to be reported to Management for review, in relationship to potential asbestos content. Occupants in buildings with sprayed on asbestos containing ceiling material will be notified by the Management or Building Manager. The building inventories will be available to all occupants by contacting Management.

Handling Asbestos Materials during Maintenance and Renovation Activities

Asbestos containing materials improperly handled can cause employee exposures to asbestos fibers and lead to building and surface contamination. **It is our policy that asbestos containing materials will only be handled or removed by certified asbestos contractors with proper equipment, training, and controls.**

1. Asbestos Cement Pipe Work: Where the removal of asbestos is not the primary objective and methods of removal are in compliance. The work does not have to be performed by certified asbestos abatement workers. Employees who work on asbestos cement pipe must strictly follow the Department of Environmental Quality Standards on cutting or tapping the pipe.

Control Measures Used To Preclude Exposure & Appropriate Work Practices

1. We will hire contractors who use approved asbestos abatement methods. Projects may include either small scale or large-scale removal. Examples of Class II to IV projects include:
    a. Pipe repair.
    b. Valve replacement.
    c. Installing electrical conduits.
    d. Installing or removing drywall, roofing and other general building maintenance.
    e. Renovation which is small scale.
    f. Removal of asbestos containing insulation on pipes using a glove bag.
    g. Removal of small quantities of asbestos containing insulation on beams or above ceilings.
2. Safe Methods for Removal
    a. The methods of removal need to involve one or a combination of the following practices and engineering controls which are capable of reducing employee exposure to below the action level of 0.1 fiber/cubic centimeter.
        i. Wet method (asbestos containing pipes)
        ii. Glove bag for small isolated repairs
3. Maintenance staff shall not use the following procedures when working with or around asbestos containing materials:
    a. Drill holes in asbestos material, with the exception of wet tapping AC water pipe.
    b. Sand asbestos containing floor tiles.
    c. Dust surfaces that may contain asbestos with dry brushes or booms.
    d. Use regular vacuum cleaners to collect asbestos dust or debris.
    e. Remove material without proper respiratory protection and the proper type of clothing.
    f. Damage asbestos containing materials when moving or conducting general maintenance.

g. Install curtains, drapes, or other dividers into asbestos containing materials.

Certified and Trained Asbestos Personnel

Staff or contractors selected to remove or repair asbestos containing materials shall be in compliance with the OR-OSHA rules and Department of Environmental Quality Standards.

Asbestos Waste Disposal

Our staff will follow the OR-OSHA, DEQ, and the available asbestos land fill requirements. Building materials containing asbestos can be legally disposed of using a disposal company to remove the waste bags and transport them to approved Oregon landfills. All asbestos abatement contractors will follow our rules as well as OR-OSHA and DEQ's.

Potential Asbestos Emergencies

1. Type of Emergencies:
    a. Damage to asbestos containing building materials due to willful activities of the occupants or the public; or maintenance activities resulting in unplanned contact with asbestos materials.
2. Emergency Procedures:
    a. Staff discovering an emergency will notify their supervisor who shall notify the entity's manager.
    b. Seal off area or contain the problem. Proper danger/warning signs and area security will be implemented.
    c. All clean-up, repair or removal will be done by an asbestos abatement contractor who is licensed and can be used on an emergency basis.
    d. All OR-OSHA and DEQ regulations will be followed and only asbestos certified workers with approved equipment will be allowed to contain and clean-up the emergency.

General Asbestos Awareness Training

1. What is asbestos?
   Asbestos is a generic term applied to naturally occurring fibrous hydrated mineral silicates. These minerals are regarded as hydrated because they are formed by their affinity for water.

   Asbestos has been used widely in building materials and in products that needed to be fireproof. The EPA estimated in 1985 there were 31,000 schools and 733,000 commercial buildings that had asbestos products in them. Asbestos was used because the mineral is:
   a. Fire Resistant.
   b. May be woven or used to provide strength and consistency to a product.
   c. Resistant to chemicals.
2. In the United States two primary forms of asbestos were widely used:
   a. Amosite
   Resistant to heat and chemicals, and found extensively in pipe insulation, friction materials, roofing and flooring materials.

   Characteristically a rigid, brittle fiber which cannot be woven.

   Now banned in the U.S. due to the higher cancer health risk associated with amosite.

b. Chrysotile

A long, wavy, hair-like fiber that is easily woven. Chrysotile is used in asbestos clothing products and extensively in many forms of insulation.

The shorter mill-end material is now being substituted for amosite applications.

3. Primary Health Effects
   a. The primary effects from exposure to asbestos are to the respiratory system. Asbestos exposure is also linked to effects on the gastrointestinal system.
4. Particle Size
   a. Asbestos is made up of fibers which are bundles of smaller and smaller fibers called fibrils. When asbestos material is disturbed countless numbers of very small fibrils, microns in size (millionths of a meter), are released into the air. Fibers 75 microns in size will get trapped in the nose and, Fibers 1-5 microns in size are trapped in the bronchioles and lungs.
   b. The actual particle size of the asbestos that is released is important because:
      i. Once a small particle becomes airborne it can remain suspended almost indefinitely, even in a very small environment.
      ii. Particles of this size are carried into the deepest part of the lungs, past the protective mechanisms in the nose, sinuses, and larynx.
      iii. The asbestos fibers are crystalline minerals and are very persistent, which means that the fibers do not degrade in biological tissue. Once breathed deep into the lungs, the fibers may remain there indefinitely.
      iv. The mechanism of damage to tissue appears to be associated with the mechanical irritation caused by the sharp ends of the fibers.
5. Diseases Associated with Asbestos Exposure
   a. Asbestosis of the lung - A fibrotic degeneration of the lung usually associated with chronic exposure to asbestos. The disease restricts the ability of the lungs to expand and causes scarring of the lung tissue. This causes progressive shortness of breath, respiratory failure, and cardiac decompensation, which is the heart's inability to maintain circulation because of reduced oxygen levels. The disease is progressive even in the absence of continued exposure to asbestos.
   b. Lung Cancer - Cancers of the lung are seen at higher incidence rates in individuals who have been exposed to asbestos. The incidence rate is 90 times greater for workers who smoked tobacco and were exposed to asbestos than workers only exposed to asbestos.
   c. Mesothelioma of the lung pleura - A rare form of cancer hitch is almost entirely related to asbestos exposure. The disease is not curable and individuals with mesothelioma rarely live more than one year after diagnosis. Mesothelioma is not associated with smoking and may occur following exposure to low levels of asbestos and a level of dust exposure defined as a "safe" level for lung cancer risks.
   d. Gastrointestinal Cancers - Asbestos workers exhibit higher rates of cancers of the stomach, intestines, bowel, and rectum.
   e. Pleural Plaques - Plaques are seen on the X-Rays of asbestos workers. These are dense strands of collagen (connective tissue proteins) showing as opaque patches on the X-Rays. These plaques can be seen with no disease and do not reflect severity of disease tissue but indicate asbestos exposure.
   f. Asbestos - There are those who contend that there is no safe limit for exposure to asbestos. The current epidemiological studies, however, do suggest a typical dose-response relationship for most of the asbestos related diseases. Thus, the higher the

exposure, the higher the incidence of disease is seen. Studies have also indicated a higher incidence of disease associated with amosite-type asbestos.

6. Relationship of Smoking and Asbestos Exposure
   The 1985 Surgeon General's report on "The Health Consequences of Smoking - Cancer and the Chronic Lung Disease in the Workplace", reports on the research findings about the risk of developing lung cancer and lung diseases among asbestos exposed workers and asbestos exposed workers who smoke. The following conclusions were drawn by the report:

   Asbestos exposure can increase the risk of developing lung cancer in both cigarette smokers and nonsmokers. The risk in cigarette-smoking asbestos workers is greater than the sum of the risks of the independent exposures.
   a. The risk of developing lung cancer in asbestos workers increases with increasing number of cigarettes smoked per day and increasing cumulative asbestos exposure.
   b. The risk of developing lung cancer declines in asbestos workers who stop smoking; however, the risk of developing lung cancer appears to remain significantly elevated even 25 years after cessation of exposure.
   c. Cigarette smoking and asbestos exposure appear to have an independent and additive effect on lung function decline. Nonsmoking asbestos workers have decreased total lung capacities (restrictive disease). Cigarette-smoking asbestos workers develop both restrictive lung disease and chronic obstructive lung disease.
   d. Asbestos exposure is the predominant cause of interstitial fibrosis (asbestosis) in populations with substantial asbestos exposure.
   e. The promotion of smoking cessation should be an intrinsic part of efforts to control asbestos-related death and disability. For workers for whom asbestos exposure has ceased, the single most important intervention that would alter their future disease risk is the cessation of cigarette smoking.
7. Latency of Disease to Exposure
   Asbestos related diseases typically develop 30-40 years subsequent to the beginning of the exposure. Workers who have been heavily exposed have shown symptoms within 5-10 years, but this is not typical.
8. Personal Protective Equipment
   Only asbestos abatement contractor’s who meet the PPE and respiratory protection rules shall be used. Contact the Supervisor for more details on the program requirements.

Medical Surveillance

There is no need for our employees to be part of an asbestos medical surveillance program.

Recordkeeping

1. Exposure Measurements (records need to include):
   a. Date of measurements.
   b. The operation tested.
   c. Sampling and analytical method used.
   d. Number, duration, and results of the samples.
   e. Type of protective devices worn.
   f. Name, social security number, and exposure of the employees whose exposures are represented.
   g. The records need to be maintained for 30 years.
   h. Where the records are stored.

CHAPTER 12. LEAD COMPLIANCE PROGRAM

Introduction

There are various job operations that may result in lead exposures to the City staff. These job tasks will require complying with the OR-OSHA Construction Lead Regulations, and 29 CFR 1926.62.
It is our policy that our operations will comply with the OR-OSHA Construction lead standard and the following lead compliance program. Any questions about this program should be directed to the supervisor.

Applicable Legal Standard

Federal: 29 CFR 1926.62
State: OAR 437 - Division 3 "Construction Safety Rules"

Responsibilities

To ensure compliance activities are carried out and that proper recordkeeping is done the following outlines the overall responsibilities of staff.

1. Management: It is the direct responsibility of management to ensure that the lead compliance program elements are implemented and that employees follow all painting, renovation site safe work practices and safe firing range procedures. They are also responsible to ensure that a lead exposure assessment is completed and specific program elements are carried out, including:
    a. Ensuring appropriate personal protective equipment is provided and used.
    b. Proper engineering or work practices are implemented and maintained.
    c. Conducting inspection audits to ensure lead compliance plans are implemented and followed.
    d. Assisting in the development of lead compliance plans and the updating/revision of the plans.
    e. Ensuring that biological monitoring and medical examinations are done for employees involved in job tasks with exposures at or above the lead action level standard.

Respirator Fit Testing and Training

1. Respirators will be worn during work activities where lead-containing materials are used until exposure monitoring identifies the airborne levels are below OR-OSHA threshold levels.
2. The supervisor will provide employee fit testing for employees included in this program.
3. This program will meet Chapter 9: Respiratory Protection Program Standards.
4. Physician responses to the individual respirator questionnaires will be kept in the employee's confidential medical records file located in Human Resources.

Employee Training

1. All employees who work on lead containing materials will receive lead training.
2. A roster of employees' trained will be maintained.
3. The Supervisor or a training consultant will provide employee training.

Compliance Plan Development, Implementation, and Audit

1. The supervisor will develop a lead compliance plan for each job when exposure is expected to exceed the Permissible Exposure Limit.
2. The plans will be maintained by the supervisor. The plans are available for employee review.

3. The supervisor will conduct inspection audits to ensure that the plans are implemented and followed by the employees.

Recordkeeping

1. The supervisor will maintain copies of the compliance plan, employee training records, names of those employees in medical surveillance program, and the current lead monitoring results.
2. All lead records must be kept for at least 40 years.

CHAPTER 13. ERGONOMICS PROGRAM

Purpose

This chapter has been implemented with the goal of strengthening our commitment to occupational injury prevention. The goal of ergonomics is to eliminate or reduce worker exposure to hazards or work conditions which lead to musculoskeletal disorders which are injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal discs.

CHAPTER 14: CRANES, DERRICKS & HOIST

Purpose

The Crane, Derrick, and Hoist safety policy and procedures are designed to protect employees from potential hazards that can be created by the usage of cranes. This chapter will also help ensure compliance with the OR-OSHA standards.
It is important to note that this policy does not replace the need for the employees to fully understand the manufacturer's operating instruction.

Applicable Legal Standards

Federal: 29 CFR 1910.179-181 "Cranes"
State: OAR 437- 002
State: OAR 437 Division 3 Subdivision N. "Construction Crane Standard"

Definitions

Authorized Employee (Designated personnel) - Employees who have been designated by management to operate a crane in their work area. They shall be trained and supervised in proper operation and trouble shooting.

Crane - A machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism an integral part of the machine. Cranes whether fixed or mobile are driven manually or by power.

Derrick - An apparatus consisting of a mast or equivalent member held at the head by guys or braces, with or without a boom, for use with a hoisting mechanism and ropes.

Hoist motion - The motion of a crane which raises and lowers a load.

Preventive Maintenance - The regularly required maintenance checks (required by OR-OSHA rules) and recommended manufacturer's preventive maintenance.

Overhead crane - A crane with a movable bridge carrying a moveable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.

General Responsibilities

Only authorized employees are permitted to use any crane devices. If cranes of 5 tons or greater are used in construction activities only licensed employees who have proof of certification by an identification card are permitted to operate the crane(s). All employees are required to follow the safeguards in this chapter.

1. Manager: It is the responsibility of the department manager to ensure that all employees who are permitted to operate a crane are trained and authorized for the equipment he/she is using. They are also responsible to see that the required safety audits and preventive maintenance is done appropriately and timely.
2. Authorized Operator: The operator shall immediately report to the supervisor any unsafe conditions of equipment, and shall not use it until it is repaired.
3. Licensed Construction Crane Operator: The licensed construction crane operator must meet OAR 437-002-0228 (2) or 437-03-0081 requirements.

4. Supervisor and Safety Committee: The supervisor and Safety Committees must include crane safety as part of their quarterly safety audit functions.

Inspections

A crane in an unsafe working condition will not be used under any circumstances. All cranes and hoists shall be thoroughly inspected annually by a competent person. Records of monthly and annual inspections and results shall be maintained by the supervisor.

Cranes are to be inspected to ensure proper performance. Each crane must be checked prior to use daily or monthly and annually. The individuals assigned the inspection duties need to be trained in what to check and how to determine the proper function of the crane/hoist.

The annual detailed inspections may be performed by an outside contractor. The crane manufacturer's manuals will need to be used in providing additional information on performance inspection.

Crane Inspection - The inspections include but are not limited to the following requirements (as required by OR-OSHA rules):

1. A competent person to inspect all the crane equipment frequently prior to use and during use to make sure it is in safe operating condition.
2. The frequency of inspections varies from daily to monthly depending on the type of crane and use conditions.
3. The operator shall immediately report to the supervisor any unsafe conditions of equipment, and shall not use it until it is repaired.
4. No unauthorized person shall repair any electrical or mechanical lifting equipment.
5. The following inspection schedule shall be implemented by the supervisor or a designated "Competent Person(s)":
    a. Daily Inspection (no written records required)
        i. All functional operating mechanisms which may interfere with the proper operation and for signs of excessive wear.
        ii. Deterioration of parts.
        iii. Visual inspection of the hooks for deformation or cracks.
        iv. Visual inspection of hoist and load attachment chains, and slings.
6. Monthly Inspections
    a. All functional operating mechanisms which may interfere with the proper operation and for signs of excessive wear.
    b. Deterioration of parts.
    c. Visual inspection of the hooks for deformation or cracks.
    d. Visual inspection of hoist and load attachment chains, and slings.
    e. Detailed findings on an inspection report.
    f. Any defects found need to be immediately corrected.
    g. A record of all monthly inspections, dates, and results shall be kept in the supervisor's office or in the equipment maintenance log.
7. Annual Inspection
    a. A thorough annual inspection of all cranes shall be done by a competent person.
    b. A record of the annual inspections, dates and results shall be kept by the supervisor.

Procedures

1. Cranes, derricks, and hoists shall be operated by authorized personnel only in accordance with the manufacturer's specifications and limitations. Any trainee learning to use lifting equipment must be under the direct supervision of an authorized operator.
   Note: 5 tone cranes used in construction activities have additional requirements not covered in this section. (See Division 3 Construction.)
2. Crane/derrick operation regulations required employee training which includes 437-002-0228(2) Crane Operator Training Requirements.
3. The employer shall establish written procedures for the safe operation of all cranes.
4. The employer shall see that employees who operate cranes or derricks are properly trained, have sufficient practical experience, and follow the operating procedures for the safe operation of the crane or derrick.
5. The level of the training and experience determined by the employer as meeting section (2) above shall be recorded in writing.
6. The manufacturer's rated load capacity shall be conspicuously posted on all cranes and hoists.
7. The limit switch shall never be used as an operating control.
8. If the power goes off while an electric crane is being operated, make sure to turn off all switches or operating buttons.
9. Before hoisting work begins, consideration must be given to the fact that stress is greatly increased if the leg of a hoisting chain, cable, or rope is rigged at an angle of less than 90 degrees. Avoid angles of less than 45 degrees. Angles less than 30 degrees shall not be permitted.
10. The loads lifted shall not exceed the maximum capacity of the crane or hoist and its lifting attachments. Side pull is prohibited. The load must be directly in line with the mast or boom.
11. No person shall ride a load or hook.
12. Two or more separately rigged loads shall not be hoisted at one time.
13. The person operating the crane is responsible for the load. If receiving signals or instructions they shall come from one authorized employee only.
14. The operator shall have a clear view of work and equipment at all times.
15. The load shall be attached to the crane by slings or by other approved devices.
16. Deformed or defective hooks, rings, or other lifting equipment links shall not be used.
17. Hooks shall be taken out of service when any of the following conditions exist:
    a. The hook has more than 10° twist from the plane of the unbent hook.
    b. The hook has more than 15% in excess of normal throat opening.
    c. The hook has any cracks.
    d. Call manufactures for any other inspection questions.
18. Wire rope cables that appear to be cut, frayed, kinked, or rusted shall not be used.
19. Wire rope shall receive emphasis during daily, monthly and annual inspections. Wire rope shall be taken out of service when any one of the following conditions exist:
    a. In running ropes, 6 randomly distributed broken wires in 1 lay or 3 wire broken in 1 strand in 1 lay
    b. Wear of 1/3 the original diameter of outside individual ropes. Kinking, crushing, bird-caging, or other damage resulting in distortion of the ropes structure.
    c. Evidence of any heat damage from any cause.
    d. Reduction from nominal diameter of more than 1/64” from diameters up to and including 5/16”; 1/32” for diameters 3/8” to and including 1/2”; 3/64” for diameters

9/16” and including 3/4”; 1/16” for diameters 7/8” to 1-1/8” inclusive; 3/32” for diameters 1-1/4” to 1-1/2” inclusive.

20. Standing ropes will be taken out of service if any of the following conditions exist:
    a. More than 2 broken wires in 1 lay in sections beyond end connections.
    b. Any rigging rope has 1 or more broken wires near an attached fitting.
    c. Corroded, damaged or improperly applied end connections.
21. Knots shall not be used to shorten nylon or wire rope slings.
22. Chain links of a hoist shall not be secured by a nut and bolt, nails, pins or other means not recommended by the manufacturer.
23. Chain slings lifting equipment should not be subjected to sudden shock by twisting, snapping or jerking into place.
24. The working line of the hoist shall not be wrapped around the load.
25. Rope clips shall be installed and used according to the safety codes. When used for eye splices, the U-bolt shall be applied so that the "U" section is in contact with the dead end of the rope.
26. Before a load is lifted, it shall be inspected for loose parts or objects.
27. The safety latch on the hook of a hoist shall be secured in every instance when lifting or moving a load.
28. The operator shall see that the load is secured and properly balanced before it is lifted more than a few inches off the ground, floor, or support.
29. The operator shall test the brake each time a load is lifted by raising the load a few inches and applying the brake.
30. Care shall be taken to see that the equipment with which the load is lifted is not kinked or caught against obstructions while moving the load upward and that the load does not hit any obstructions.
31. Lifting equipment must not drag under a load.
32. The operator must refrain from getting between the load and a solid surface, to avoid being pinned or caught by a falling or moving load.
33. Do not grab the cable as it is being pulled through the sheave wheels.
34. Employees must stand clear of all suspended loads.
35. A loaded crane should never be left over machinery.
36. Suspended loads shall not be left unattended.
37. When lowering a load, the operator shall proceed carefully, making sure that he/she has it under safe control at all times.
38. Lifting hooks and fastenings shall not be removed until material is at rest in a stable position or safely secured by other fastenings.
39. Before moving a crane on which an empty sling is hanging, the operator must secure the bottom ends of the sling to the block, hook, or sling ring.
40. When moving a crane, make sure the hook and/or the load will clear all obstacles.

CHAPTER 15. CONTRACTOR SAFETY AND HEALTH HAZARD CONTROL NOTIFICATION POLICY

Purpose

OR-OSHA regulations require notification of outside contractors regarding safety programs for Hazard Communication, Asbestos, Hazardous Waste, Hazardous Energy Control and Confined Space. In addition to these basic requirements all outside contractors performing work in our buildings or facility will be notified of the basic Emergency Action Plan and safety rules.

Contractors who are hired to perform maintenance work involving the need to control hazardous energy or enter confined spaces will be informed of the programs and the associated hazards that the City is aware of. The notification is not designed to take over the contractor's safety responsibilities to his or her employees but to provide appropriate notification under the OR-OSHA rules.

Check lists may be provided to the contractor regarding notification information including: notification checklists for the overall safety rules control of hazardous energy, and confined space entry, asbestos, and hazardous waste. Managers that are responsible for the outside contract will ensure that this material is provided to the contractor and that a signed statement is completed by the contractor. Safety and occupational health questions should be directed to the department/project manager.

Applicable Legal Standards

This policy applies to all contractors hired including, but not limited to: construction, electrical, confined space entry contractors, and bulk chemical haulers.

1. Federal: 29 CFR 1910
2. State: Oregon OAR 437 Division 2

Responsibilities

1. Department or Project Managers: The Department or Project Manager generally has the overall responsibility for construction and electrical contractors. It is the Department or Project Manager’s responsibility to review the Safety Manual and obtain signed statements from the contractor representatives. If there is any joint work done between the contractor and our employees it is the manager's responsibility to see that proper Energy Control Procedures are carried out. The Department or Project Manager is responsible for keeping a contractor's file and if the same contractors are used for an on-going period of time the notification will be updated on an annual basis.
2. The contractor file should note the following:
    a. Ensures that the safety policies and updated.
    b. Specific safety questions are responded to.
    c. Audits the Contractor Notification system.
    d. Assists in ensuring that contractors follow our policies and do not endanger our employees.

Process Overview

The contractor notification process flow:

- The Department or Project Manager is to determine scope of contractor work and prepare an adequate contract or purchase order for the services.

- Select the contractor and provide the contractor with a copy of the safety manual.
- Copy of the acknowledgment letter is provided to contractor and a copy is retained in the contractor's file.

Informing Contractors of Hazard Communication Program

When outside contractors perform work for the City of Newport the Department or Project Manager will ensure that the contractor management representative is informed of any hazardous chemicals and needed controls.

The following methods will be used to inform outside contractors of the potential chemical hazards in their work areas:

- Hazardous chemicals to which they may be exposed while on the job site.
- Precautions the employees may take to lessen the possibility of exposure.
- Location of MSDS for chemicals they are potentially exposed to.
- Temporary Service employees will be trained in the same manner as permanent employees.
- If additional information is needed the Department or Project Manger should be contacted for assistance.
- If the contractor is bringing in hazardous materials then the Department or Project Manager will ensure that the contractor has all the pertinent MSDS at the job site.

Asbestos Material Notification

When outside contractors perform building renovations or remodeling where asbestos building materials may be present, the department or project manager will ensure that the contractor management representatives are informed of the presence of asbestos building materials. This will include ensuring that an assessment is done to determine if an asbestos abatement project must be done first.

The following methods will be used to inform outside contractors of the presence of asbestos containing building materials:

- The Department or Project Manager will ensure that the contract manager is informed of the planned work.
- The Department or Project Manager will review the plans with the contractor to determine the scope of the work assessing the potential for contact with asbestos containing materials.
- If asbestos materials will be disturbed or need to be removed the Department or Project Manager will arrange for a licensed asbestos abatement contractor to perform the work prior to the other contracting operation. Alternately this work could be included with the contract scope of work. The contract would require that the work be performed by a licensed asbestos abatement contractor.

Hazardous Waste Notification

When outside contractors perform work involving the removal and disposal of hazardous waste the Department or Project Manager is responsible for crew and process safety. The procedures used are to meet DEQ/EPA requirements.

The following methods will be used to inform outside contractors of the potential chemical hazards in their work areas:

- Department or Project Manager will only contract with licensed Hazardous Waste haulers and dispose of materials only in permitted methods.
- Department or Project Manager will require that the hazardous waste contractor's employees are trained in the required DEQ and or-OSHA programs and are informed as to the materials that are being collected, hauled and disposed of.
- Department or Project Manager will require that all the proper DEQ/EPA and DOT paper work is prepared and available for all the parties involved as required.

Informing Outside Contractors of the Hazardous Energy Control Program

- When outside contractors are hired at to work on machines and equipment, their activities may require that hazardous energy be controlled, as a result, a copy of our procedures will be given to that contractor and a mutually agreed upon procedure established concerning the lockout/tagout devices that will be used to protect employees and the contractor's workers. This coordination will help to ensure that all of our employees know what kind of work is to be performed, where and when it is to be performed, and how they are being protected.
- Department or Project Manager will identify the energy isolating devices for the contractor, as necessary. The contractor's employees will be responsible to lockout all devices capable of locking or place an energy control tag on or as near the device as possible.

Informing Outside Contractors of the Confined Space Plan and Known Space Hazard

If a contractor is hired to perform confined space entry work then the Department or Project Manager shall see that the contractor's management representative is notified of our Confined Space Policy and the known hazards associated with the space. This notification is to ensure that the company complies with rule 1910.146 (c) (8) of the Confined Space regulations. If we contract for confined space entry work as the host employer the Department or Project Manager is responsible to:

- Inform the contractor that a permit required space is involved in the work. This includes information about any chemicals in the space per Hazard Communication requirements.
- Apprise the contractor of the hazards our organization has identified and any experience employees have had with the space.
- Apprise the contractor of any precautions our employees have taken for entry.
- Coordinate entry operations with the contractor if more than one contractor or if our employees will also be entering the space.
- Debrief the contractor to determine if any problems were encountered requiring changes in procedures.

Hot Work - Welding Permission System

When outside contractors are hired and their work involves welding, it is the Department or Project Manager's responsibility to see that the contractor uses a hot work permit process to ensure that all fire hazards are controlled. The hot work permit is required to be done by the contractor and available to our Department or Project Manager. The permit will not be required if the welding is done in a welding shop area.

Department or Project Manager will provide the contractor with the basic form required by our organization. If the contractor has their own hot work permit and system that can be used as long as it is done and available.

Note: This document does not list all potential or existing hazards or rule compliance issues, but is intended to provide overall safety control issues that contractors and their employees are required to follow. This guide does not anticipate all problems nor identify all possible solutions. Each contractor remains responsible for the safety and health of his/her employees and must be vigilant in identifying and correcting hazards and reporting any problems or accidents/near misses to the Department or Project Manager.

CHAPTER 16. FORKLIFT SAFETY

Purpose

This Forklift/Industrial Vehicle Safety Policy is designed to help ensure that its employees are protected from unsafe conditions and operations that potentially can occur in the use of industrial vehicles. In addition, this program is to ensure compliance with OR-OSHA regulations dealing with the use of industrial vehicles.

Only trained and authorized employees are permitted to drive or operate industrial vehicles. All operators are required to follow the procedures in this chapter and manufacturer recommendations on vehicle usage and safety. All industrial vehicles are to be maintained in safe operating conditions.

Applicable Legal Standards

Federal: 29 CFR 1910.178 “Powdered Industrial Vehicles"
State: OAR 437 - Subdivision N

General Responsibilities

1. Management: Managers and supervisors are responsible to see that only trained employees are authorized to operate industrial vehicles. Management is required to see that adequate maintenance services are provided and used to ensure safe vehicle operating conditions.
2. Supervisor:Supervisors will provide employee training and audit operations for compliance with this chapter and OR-OSHA regulations.
3. Authorized Operators: Employees who are authorized to operate industrial vehicles must follow all safety procedures as outlined in this chapter, by OR-OSHA rules and manufacturer’s recommendations. Employees are required to complete daily operating safety checks and ensure all unsafe equipment is taken out of service and repair prior to use.
    a. All vehicle operators will immediately report any accidents to the supervisor.
4. Safety Committee: The Safety Committee will include review of industrial vehicle safety in their quarterly inspection activities.

Safety Procedures

Authorized Operators

1. Authorized Operators shall be trained and approved by their supervisor to operate various types of industrial vehicles. The training shall consist of:
    a. Instruction in proper inspection and safe operating procedures as outlined in this program.
    b. A hands-on demonstration by an authorized driver, supervisor or competent outside trainer.
    c. A written examination on the inspection and safe operating procedures.
    d. This training will occur upon initial assignment, annually, or whenever the supervisor sees a need for reorientation.
2. Only authorized personnel shall operate forklift trucks.

Inspections and Fueling

1. Before start of shift, a visual inspection must be made to determine that the horn, lights, brakes, tires, gas supply, hydraulic lines, etc. are in safe working conditions.

Note: Any defects shall be reported immediately to your supervisor and or maintenance for correction. The vehicle will be out of service until proper repairs can be made.

2. The operator shall not operate an unsafe forklift or other industrial vehicles at any time.
3. Operators shall not make any repairs or adjustments on any vehicle unless trained and authorized to do so.
4. For electric powered vehicles, battery charging shall be done only in a well-ventilated area. No smoking or open flame are permitted in battery charging areas.
5. Only authorized personnel will do fueling.

Determining Load Capacity

1. Operators shall not exceed the safe load capacity of a vehicle at any time. Double tiered loads shall not be handled unless the vehicle is designed to accommodate the load.
2. The load capacity is shown on the "Forklift Nameplate".
3. The load center is determine by the center of gravity which is listed as the horizontal distance from the front of the face of the forks, or the load face of an attachment, to the center of gravity of the load.
4. The center of gravity of lift truck moves because it has moving parts. The center of gravity moves forward and back as the upright is tilted forward and back. The center of gravity moves up and down as the upright moves up and down. Factors in determining the center of gravity:
    a. Size of load
    b. Weight of the load
    c. Shape of the load
    d. Position of the load
    e. Lift height
    f. Amount of tilt
    g. Tire pressure
    h. Dynamic forces created when the truck is moving (acceleration, braking, turning, and operating on uneven surfaces or incline)
5. Operators shall not counterweight a forklift to increase lifting capacity, rather the load shall be broken down or a forklift with a higher rating shall be used.

General Operating Safety Rules

1. The operator must be in control of the forklift steering at all times.
2. No person shall ride as a passenger on a forklift or forks or on the load being carried.
3. A forklift will not be used to elevate a platform or pallet with persons on it, except work platforms specifically designed for this purpose. Work platforms must have standard guardrails, and must be securely fastened to the forks. In addition:
    a. The hydraulic system shall be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system.
    b. An operator shall stay in attendance at the forklift while workers are on the platform.
    c. The operator shall be in the normal operating position while raising or lowering the platform
    d. The vehicle shall not travel from point to point with the work platform elevated at a height greater than 4 feet while workers are on the platform. When necessary at heights greater than 4 feet, inching may be permitted provided it is done at a very slow speed.
    e. The area between workers on the platform and the mast shall be guarded to prevent contact with chains or other shear points.

4. Operators shall not put their fingers, arms, or legs between the uprights of the mast, or beyond the contour of the forklift.
5. Operators shall look in the direction of travel.
6. Operators must avoid making jerky starts, quick turns, or sudden stops. Travel slowly when turning. Lift trucks can tip over even at very slow speeds. The combination of speed and sharpness of a turn can cause a tip over. A lift truck is less stable when the forks are elevated, with or without a load. In fact, the lift truck will actually tip over more easily when empty than when loaded with the load lowered.
7. If the lift truck tips over:
    - DO NOT JUMP OFF!
    - HOLD FIRMLY TO THE STEERING WHEEL; BRACE YOUR FEET AND LEAN FORWARD AND AWAY FROM THE POINT OF IMPACT.
8. The operator will not use reverse as a brake.
9. Forklifts shall be driven on the right side of the aisle way/roadway.
10. Operators shall cross railroad tracks diagonally whenever possible.
11. All vehicles shall be operated at a safe speed with due regard for traffic and conditions. Maximum allowed speeds:
    - Inside buildings - 5 mph
    - Outside buildings and not in work areas - 7 mph
    - On roads outside - 10 mph
12. Operators shall slow down on wet and slippery surfaces.
13. Operators shall slow down at cross walks and locations where vision is obstructed.
14. Operators entering a building or nearing a blind corner shall make their approach at reduced speed, sound horn, and proceed carefully. (Exception: blind corners equipped with mirrors providing a full view in all directions.)
15. Operators shall give pedestrians the right-of-way at all times.
16. Operators shall not drive toward any person who is in front of a fixed object or wall.
17. Operators shall not overtake and pass another forklift traveling in the same direction at intersections, blind spots, or hazardous locations.
18. No person shall stand or walk under elevated forks or any load.
19. When a forklift is not carrying a load the operator shall travel with the forks low.
20. The load shall be carried as low as possible (consistent with safe operations, 2 to 6 inches above the surface).
21. Forks shall be placed under the load as far as possible.
22. Generally, do not lift a load with one fork.
23. No load shall be moved unless it is safe and secure. To maintain balance, the load should be centered and the forks properly spaced to be near the outside edges. Before traveling, the load shall be tilted back until it rests securely. A load backrest shall be used to prevent spilling of the load.
24. Position each fork the same distance from the center of the carriage. Set forks as far apart as possible for maximum support of the load. Center the weight of the load between the forks. Otherwise, the load may fall off the forks when you turn a corner or hit a bump.
25. The operator's view should not be obstructed by the load. In the event of a high and or wide load the forklift will be driven backward in low gear.
26. Operators need to watch overhead clearance.
27. On a downgrade, the load shall be last.
28. On an upgrade, the load shall be first.

29. Bridge plates shall be properly in place and secured. Wheels of trucks and railroad cars shall be blocked to prevent movement during loading.
30. Forklift drivers will come to a complete stop before reversing direction of travel.
31. Unstable loads shall be restacked or banded.
32. Use extra care when handling long lengths of pipe, or other materials.
33. Avoid sharp or fast end-swing. Lift trucks are designed to work in relatively small space. Because of this they can turn sharper than some other vehicles. When the truck is steered by the rear wheels the rear of the truck moves to the side during a turn. This movement is called "tail swing". An operator must be aware of the tail swing and always check to make sure the tail swing area is clear before turning. Failure to observe the tail swing area when making a turn can injury or kill someone.
34. Hazardous materials will not be moved unless they are in approved containers.
35. Compressed gas cylinders shall be moved only in special pallets designed for this purpose.
36. When unloading trucks or trailers, the brakes on the vehicle will be set (locked) and the wheels choked.
37. The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness. Powered industrial trucks shall not be driven onto flooring that is found to be of inadequate strength.
38. Operators shall never attempt to turn sideways on an incline. Do not run on an incline to reduce the possibility of a tip over a lift truck most not be driven across an incline.
39. All vehicles shall be equipped with audible warning signals and where practical shall have spark arrestors.
40. All vehicles operated at night in dark buildup or in poorly lighted areas shall be equipped with head and taillights.
41. All vehicles operated in areas where overhead hazards exist shall be equipped with an approved overhead guard.
42. Vehicle flywheels, gears, sprockets, chains, shear points and other exposed parts constituting a hazard to the operator or other employees shall be guarded.
43. Vehicles powered by internal combustion engines shall not operate in buildings unless the buildings are adequately ventilated.
44. Vehicles must be safely parked when not in use. The controls shall be neutralized, power shut off, brakes set, and the forks left in a down position flat on the surface, and not obstructing walkways or aisles. These procedures must be used whenever the operator leaves the forklift unattended (i.e. when the driver is 25 feet or more away or the vehicle is out of the operator's view).
45. A forklift shall not be left on an incline unless it is safely parked and the wheels blocked.
    a. No forklift shall be parked within 10 feet of a railroad track.
    b. Forklifts shall not be parked or left unattended in aisles, by exits or doors.

LPG Tank Filling Procedure

1. OR-OSHA Requirements:
    a. OAR 437-125-230(3) Industrial trucks (including lift trucks) equipped with permanently mounted fuel containers shall be charged outdoors.
    b. OAR 437-125-430(7) the dispensing of LP gas into the fuel container of a vehicle shall be performed by a competent attendant who shall remain at the LP gas dispenser during the entire transfer operation.
    c. OAR 437-125-230(5) Engines on vehicles shall be turned off while fueling if the fueling operation involves venting to the atmosphere.

d. OAR 437-125-435 There shall be no smoking on the driveway of the (fueling area), in the dispensing areas or transport truck unloading areas.
e. Signs prohibiting smoking shall be posted within sight of the person refueling. Letters on such signs shall be not less than 4 inches high. The motors of all vehicles being fueled shall be shut off during the fueling operations.

Basic rules: Industrial Truck Use of LPG

1. When filling forklift tanks, the employee must wear eye, face and hand protection.
2. No more than two LP Gas containers shall be used on an industrial truck for motor fuel purposes.
3. Industrial trucks shall not be parked and left unattended in areas of possible excessive heat or sources of ignition.
4. All sources of ignition should be eliminated to the extent possible. Conspicuous signs must be posted in the storage area forbidding smoking.
5. For outside tank areas, all readily ignitable material such as weeds and long dry grass shall be removed within 10 feet of any container.

Container valves and container accessories

1. Valves, fittings, and accessories connected directly to the container including primary shutoff valves, shall have rated working pressure of at least 250 p.s.i.g. and shall be of material and design suitable for LP Gas service. Cast iron shall not be used.
2. Shutoff valves shall be located as close to the container as practicable.

Changing Vehicle Tire Procedures

1. All vehicle tire changes must meet the Federal OSHA standard 29 CFR 1910.177 “Servicing Multi-piece and Single Piece Rim Wheels”.
2. Additional tire changing procedures apply to all heavy equipment which include.
    a. The tire shall be deflated to 7 pounds pressure or less (both tires, if they are dual wheels) before any other procedure is started to remove the tire and wheel from a piece of heavy equipment.
    b. An air hose extension shall be provided so that this hose can be attached to the valve to inflate the tire and extend out from the tire so the person inflating a tire can be off to one side of the tire and not directly over or in front of the tire and wheel as it is inflated.

CHAPTER 17. EXCAVATION SAFETY

Definitions

An **excavation** is any human-made cut, cavity, trench or depression in an earth surface, formed by earth removal. All excavations five feet or more in depth are required to have a protective system in place to protect employees from injury unless:

a. The excavation is made entirely in stable rock; or
b. The excavation is less than five feet in depth and a competent person has examined the ground and determined there is no indication of a potential cave-in.
c. Acceptable protective systems include:
    i. Sloping
    ii. Benching
    iii. Support or shield systems (i.e., timber systems, aluminum hydraulic shoring systems, trench coffins, etc.).

Minimum Requirements for Excavations

1. Utility locates must be done before ANY digging or excavation is started.
2. Excavations deeper than 5' requires cave in protection (shielding, benching or shoring).
3. Any excavation deeper than 20' must have cave-in protection designed by a qualified engineer.

Safety Rules for Excavation Operations

1. Hi-visibility outerwear is required when working around heavy equipment.
2. Means of egress (ladders) must be available to every worker in the space within 25 feet of their work locations. (Place ladders every 25 feet along the length of the excavation).
3. Ladders must be secured and extend 3' above the top of the trench.
4. Spoils piles must be set back at least 3' from the edge of the trench or excavation. Optimal distance for heavy spoils or equipment is as far back from the edge as the trench is deep.
5. Workers should be aware of these hazards, alert the Competent Person if changes develop, and exit the space until hazards can be properly controlled.
6. Workers must stay back at least 3 feet from the swing zone of heavy equipment.
7. Working below a suspended load is prohibited.
8. Hard hats are required when working near heavy equipment.
9. Using an excavator bucket to lift or lower personnel is prohibited.
10. When working in or near an excavation, keep alert to changes in conditions including shifting soils, changes in soil appearance or odor, water flowing in, vibration and other conditions that could cause cave-in, or other problems to develop. EXIT immediately and reassess if conditions change while working in an excavation.
11. Ensure control of loose rock or soil, one of the following methods have been implemented:
    a. Scaling of the face of the excavation has been done to remove any hazardous loose material;
    b. Protective barriers are installed to contain the loose material; any other effective means is in place and there is no danger from loose materials.

Excavation Equipment

Equipment operators must be specifically trained and authorized before operating excavation equipment. Operators must conduct pre-use and work site inspections. Operators are responsible for ensuring safety in the work area.

Hydro-Excavation (Vac) Trucks

Vac Trucks have additional hazards of high volume suction hoses, pressure wands, high-pressure air and water, tanks that are confined spaces, hydraulic tip-beds, hoppers and doors. Operators must be trained and authorized on the equipment.

1. Any person operating a Vac Truck must have additional training to recognize and control hazards.
2. Special blocking procedures must be followed when elevating beds, hoppers, tanks or doors to ensure that the equipment (bed or door) does not fall.
3. Tanks and Hoppers on Vac Truck are Confined Spaces. Use appropriate confined space rules before entering.
4. Stay clear of the vacuum end of the stinger. Tremendous suction power can cause serious injury.
5. Do not point the pressure nozzle towards any person.
6. Positively stop and lock out pressure vacuum pressure, air and water pressure before servicing or un-jamming equipment.
7. Required PPE includes hardhat, eye protection, hearing protection, steel toe boots, gloves.

Trench Emergencies and Rescue

1. If an emergency occurs in an excavation, contact 9-911 immediately.
2. Trench rescue can be extremely hazardous because of conditions ranging from unsafe atmosphere to cave-in. Co-workers often become victims of secondary collapse during rescue attempts. Call 9-911 right away for emergency help.
3. When calling 9-911, be SPECIFIC about the exact nature of the emergency in order to mobilize the correct technical rescue resources as quickly as possible

CHAPTER 18. FALL PROTECTION COMPLIANCE PLAN

General Procedure

The City of Newport has responsibility for employee job site safety, and our management and employees must be accountable for meeting these responsibilities. Our staff will work with the Safety Committee in ensuring that the work can be done in a safe manner and that appropriate fall protection is either available or provided.

There are various rules that apply to fall protection. To reduce Confusion the City of Newport will comply with the most restrictive system which is found in the Construction Code under Fall Protection. Basic maintenance work, as well as construction related work, requires fall protection systems at 6 feet. General industry related work requires fall protection at 4 feet but does not require a written plan. This policy applies to all fall protection needs. Changes to the following procedures may only be done by the job site competent person (usually the Supervisor or Lead Person) if different regulations apply.

a. Fall protection needs will be evaluated by the Competent Person which may be the Foreman or Lead Person. When fall protection is needed based on the construction site needs or general maintenance or repair work task, it is the City of Newport's responsibility to implement the system and train all our employees in the system.
b. Exception from the use of conventional fall protection equipment is only available when our employees are engaged in leading edge work, or residential construction work and it can be demonstrated that it is not feasible or it creates a greater hazard to use conventional fall protection equipment.

A Fall Protection Plan work sheet template can be found in the YDrive file. The Fall Protection Plan includes the following elements:

1. Prepared by our competent person and is specific for the site where the leading edge work is being done.
2. A copy of the Fall Protection Plan is to be kept at the job site.
3. Our competent or qualified person shall approve any changes to the Plan.
4. The Plan shall be implemented, and employees are to follow the plan.
5. The Plan must document why conventional fall protection cannot be used.
6. The Plan will outline the measures taken to reduce or eliminate the fall hazard for workers.
7. The Plan identifies each location where conventional equipment is not feasible to use. These locations are classified as controlled access zones.
8. If there is an employee fall, the qualified person is to investigate the circumstances of the fall, determine if the Fall Protection Plan needs to be changed and shall implement those changes.

Fall Protection System

A fall protection system can be a variety of equipment, facilities and work procedures. The fall protection used, like a guardrail, can prevent a fall by restraining a worker from falling or safely stopping a fall by arresting the fall through the use of personal protective equipment.
Oregon OSHA requires fall protection when employees are working 6 feet or higher (four feet in general industry activities). The systems can include:

1. Guardrail System
    a. A standard guard railing which consists of a top rail, midrails and posts which can support an impact of 200 pounds in any direction. The top rail must be installed at 42

inches, plus or minus three inches, from floor level. Required on all open-sided floors, ramps, balconies, walkways and platforms elevated 4 to 6 feet or more above the floor, ground or other working surface. The midrails and toe board may be omitted where materials are regularly passed over the edge or where the railing is set back 12 inches or more from the leading edge.

b. If wire rope is used for top rails it must be marked at six-foot intervals or less with high visibility material.
c. A standard stair railing which is constructed in the same configuration as a standard railing but at a height of 30-34 inches. Required on all fixed stairways consisting of 4 or more risers, be installed on each open side.
d. A standard handrail which consists of a single lengthwise member 1-1/2 to 2 inches in diameter mounted on a wall or partition with brackets at a height of 30 - 34 inches from the stair tread. Required on enclosed stairways, preferably on the right side descending.
e. A standard toe board is at least 4 inches in vertical height and is installed no more than 1/4 inch above floor level at the perimeter of the open-sided working/walking surface. Required whenever persons pass below and there is a potential for being struck by falling objects.
f. Safety Net Systems are arrest systems consisting of mesh nets, including panels, connectors and other impact absorbing components. These would not generally be used by our employees. If safety nets are needed, our competent person will oversee the installation and performance requirements of the system. Oregon OSHA and WISHA have specific requirements for the performance of safety nets.
g. Personal Fall Arrest Systems. A safety harness and lanyard fall arrest system where the harness is worn on the body and attached to a lanyard and lifeline or structure. The lanyard consists of a rope suitable for supporting one person. One end is fastened to a safety harness and the other end is secured to a substantial object or a safety line. Required wherever a person is exposed to a fall while working from an unguarded surface more than 6 feet above a lower level or at any height above dangerous equipment.

   NOTE: The Occupational Safety and Health Rules do not require compliance with the safety harness rules whenever ". . . the work is of limited duration and limited exposure and the hazards involved in rigging and installing the safety devices equal or exceed the hazards involved in the actual construction, these provisions may be temporarily suspended provided adequate risk control is exercised under competent supervision." Consequently, no point of attachment may be available at the site. Under these circumstances, the employee shall not access the unguarded area unless an alternate protection is used to prevent exposure to a fall hazard (i.e., observation from a safe area, a secured ladder, a guard railed personnel lift or scaffold).

2. The City of Newport will provide affected employees with a safety harness and lanyard for use at sites meeting the above requirements. Training and proper fitting will be conducted prior to use. It will be the responsibility of the person using the belt/harness and lanyard to confirm with the client that the lifeline to which the lanyard is secured is above the point of operation and is capable of supporting a minimum dead weight of 5,000 pounds.
    i. When it is not feasible to use physical barriers to protect employees from falls, personal protective equipment (PPE) shall be used.
    ii. PPE shall be chosen based on the following:
    iii. Distance of potential fall.
    iv. Impact on the body from the PPE during a sudden stop.

v. Intended use of PPE (stopping fall as opposed to retrieval from a confined space).
vi. Fall arresting forces on the body.

b. Type II chest harnesses can be worn for rescue purposes only, and in no case be used to stop a vertical fall. Attachment must be located in the center of the wearer's back near the shoulder level or above the wearer's head for fall arrest.
c. When a worker(s) enters a confined space, a helper wearing the same PPE shall be stationed at the entrance to the confined space and shall monitor those inside for the duration of the project.
d. Personal retrieval systems for rescue from below ground level tanks or confined spaces.
    i. Authorized personnel shall ensure the use of a lifeline attached to a manual or power operated winch with steel cable retracting lifeline. Alternatively, a block and tackle or ratchet winch can provide the lifting mechanism with limited human effort after the victim has been hooked up, provided a lock or over speed mechanism is incorporated. An anchorage point, such as that provided by a seven or ten-foot tripod should be available before work is commenced.
    ii. Full body harnesses, yokes and wristlets shall be used when retrieval is through narrow openings.
e. Strength Requirements
    i. All components of fall protection shall meet the strength requirements of American National Standard A10.14-1991.
    NOTE: These strength requirements are based on one worker use. If multiple workers are tied off to a single lifeline, the strength requirement must be increased by the number of workers affected (i.e., two workers, one lifeline, minimum breaking strength must be 10,800 pounds at the center of line; three workers, one lifeline, minimum breaking strength must be 16,200 pounds, and so forth).
    ii. When tied off while working on suspended scaffolding, each worker must use a separate line which is not connected to the scaffold.
    iii. Permanent lifelines must be a minimum one-half inch steel cable capable of supporting 5,000 pounds per person at the center of the line.
    iv. Hardware for body belts/harnesses and lanyards must be drop forged, corrosion resistant with smooth edges, a minimum of 5,000-pound breaking strength without cracks or breaks.
    v. Knots shall not be used in components of a fall protection system since a knot will reduce the strength by at least 50%.
    vi. Lanyards shall be kept as short as possible. In no case shall they exceed six feet to minimize the possibility and length of a free fall without contacting a lower level; and must completely stop a free-fall and limit deceleration distance to 3.5 feet with a shock-absorbing lanyard.
    vii. Wire rope or rope-covered wire lanyards shall not be used where impact loads are anticipated or where there is an electrical hazard.
    viii. Belts and lanyards that have been subjected to impact loading shall be removed from service and destroyed or returned to the manufacturer for recertification.
    ix. Rope lanyards shall not be stored in work pouches where they may be subject to deterioration.
    x. Where there is exposure to abrasion, spun nylon rather than filament nylon shall be used.

xi. Only safety belts/harnesses with locking snaps shall be used to prevent "rollout" or disengagement. All hardware shall be compatible with the locking snap.
xii. Only shock-absorbing lanyards shall be used to reduce the fall arresting impact on the wearer.
xiii. Tongue-type buckles shall be used in lieu of friction buckles since friction buckles may lose the ability to stop detachment if contaminated with grease or oil.

3. Inspection and Recordkeeping
    a. The user shall inspect the fall protection prior to each use.
    b. A trained and competent person shall inspect all components of each fall protection device at least once each six months. The dates of this biannual inspection shall be recorded on a permanent tag attached to the belt.
    c. Every five years the fall protection system shall be returned to the manufacturer for recertification.
    d. Any defective body belt/harness or lifeline shall be destroyed or returned to the manufacturer before use.
    e. Any unit subjected to impact loading shall be immediately removed from service and destroyed or sent to the manufacturer for recertification.

Ladder Climbing Safety

1. A ladder cage is required on all fixed ladders more than 24 feet to a maximum unbroken length of 30 feet. Employees shall not ascend a fixed ladder more than 24 feet long unless a properly designed cage is installed or a ladder-climbing device is available.
2. A ladder-climbing device may be substituted for ladder cages in certain circumstances and usually consists of a safety belt, lanyard, friction brake and sliding attachment.
3. A floor opening cover is required whenever an opening measures 12 inches or more in its least dimension through which a person may fall. Whenever the cover is not in place, the opening must be constantly attended by a person or temporary guardrails or other physical barricades installed.
4. Positioning Devices. These systems are primarily intended to protect construction workers doing form work and reinforcing steel work which would not generally apply to electrical construction work.
5. Warning lines and safety monitoring systems have specific applications for roofing operations on low-slope roofs. Safety monitoring systems also have applications when conventional fall protection cannot be used and when no alternative measures have been implemented. These systems do not provide a physical means of preventing or arresting falls but warn of the leading edge. An example could be a barricade is a device which physically prevents entry by a person into a danger zone.

When Fall Protection Systems are required

SUMMARY OF THE REQUIREMENTS
HEIGHT BEFORE GUARDING OR FALL PROTECTION IS REQUIRED BY OSHA

ACTIVITYHEIGHTOSHA RULE

Construction:
Guard Rails6 feet**1926.500(d)
Fall Protection General6 feet1926.500-502
Low pitched roofs6 feet (10 ft exception)*437-03-75
Steel erection25 feet max unless floor1926.105

Exists within 30 feet
Perimeters and Over Water25 feet max atperimeter1926.105
Fixed Ladders24 feet1926.1053(a) (19)
ExcavationsEdge not seen1926.501(b) (7) (I)
General Industry – General4 feet1910.23
Fall Protection General10 feet437-50-50-(1)
Fixed Ladders w/o Cages24 feet437-02-1910.27(d) (5)

NOTE: To measure height:

1. The distance from the working/walking surface to grade or lower level.
2. The worst fall hazard should be considered in each particular application or work/access method.

*Oregon OSHA permits roof work up to 10 feet above a lower level without guardrails, safety nets or arrest system if they are constructing leading edges, setting walls and trusses, or doing roofing and sheathing work.

**Guardrails can be required at less than 6 feet if there is dangerous equipment below.

Employee Training

1. Our employees are all potentially exposed to fall hazards. As a result, all employees are required to be part of the Fall Protection Training Program. This program will be given by the employee's supervisor or Safety Manager.
2. Employee attendance shall be documented by a written certification report.
3. At least the latest training certification shall be maintained by the Supervisor or employee assigned recordkeeping.
4. The program includes the following training materials:
    a. Recognition of fall hazards due to the nature of the work area.
    b. Fall protection requirements.
    c. Correct procedures for erecting, maintaining, disassembling and inspecting the fall protection system to be used.
    d. The use and operation of the following systems as they apply to the need for fall protection at the job site:
        i. guardrail systems
        ii. personal fall arrest systems
        iii. safety net system
        iv. warning line system
        v. safety monitoring
        vi. controlled access zones
        vii. and other protection to be used
    e. Each employee needs to understand their role if a safety monitoring system is used.
    f. The correct procedures for the handling and storage of equipment and materials and erection of overhead protection.
    g. The role of employees in fall protection plans as applicable.
    h. Review of the OSHA fall protection standard.
5. Retraining will be given if there are changes on the fall protection program, if the equipment changes, or if there are any inadequacies in the use of fall protection systems or equipment.

Fall Protection Terms

The following terms are used in the last section on fall protection equipment:

Anchorage: A secure point of attachment for lifelines, lanyards or deceleration devices.
Arresting Force: The force generated by arresting the test weight that is transmitted through the fall arresting system components to the anchorage or load cell.
Body Belt (Safety Belt): A strap that both secures around the waist and attaches to a lanyard, lifeline or deceleration device.
Body Harness: Straps that are secured about an employee in a manner that distributes the arresting forces over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline or deceleration device.
Buckle: Any device for holding the body belt, chest harness and body harness closed around the employee's body.
Chest Harness: Straps secured only around the chest with shoulder straps to assure proper chest strap positioning.
Classification According to Use: Safety belts, harnesses and lanyards are classified according to their intended use as:
Type I: A personal fall arrest/restraint system that is used to arrest a wearer's fall from a work level. It consists of an anchorage(s), hardware, body belt or body harness, a lanyard or deceleration device and may include a lifeline, or a device that subsequently allows the employee to be lowered to the ground or lower work level.
Type II: A personal fall restraint system that is used to keep a wearer at the work level or limit any free fall to a maximum of two feet from the work level. This system consists of a body belt, a chest or body harness and anchor, as applicable.
Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate such hazards?
Construction Activities: Work for construction, alteration or repair, including painting and decorating.
Drop Line: A vertical line from a fixed anchorage, independent of the work surface, to which the lanyard is affixed.
Fixed Anchorage: A secure point of attachment, not part of the work surface, for drop lines, lifelines or lanyards. The fixed anchorage must be capable of supporting a minimum deadweight of 5,400 pounds per person.
Hardware: Buckles, D-rings, snap-hooks and associated hardware used to attach the components of the system together.
Lanyard: A flexible line used to secure a body belt or body harness to a lifeline or directly to a point of anchorage.
Lifeline: A horizontal line between two fixed anchorage, independent of the work surface to which the lanyard is secured either by tying off or by means of a suitable sliding connection. The lifeline must be capable of supporting a minimum deadweight of 5,400 pounds per person applied at the center of the lifeline.
Positioning Belt: Simple or compound straps that may be secured about the body to hold the wearer in the work position.
Positioning Device System: A body belt or body harness system rigged to support employees on elevated vertical surfaces, such as a wall or windowsill, allowing them to work with both hands free.
Qualified Person: One who by possession of a recognized degree, certificate or professional standing, or by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work or the project.

Quick Release Buckle: A multiple component buckle that can be released with one positive action and whose releasing mechanism is positively locked in normal use.
Retracting Line: An automatic tensioning system that pays out and retracts line at a certain speed and locks or brakes when the speed is exceeded.
Rope Grab: A device that attaches to a lifeline as an anchoring point to provide a means for arresting a fall
Snap Hook: A self-closing device with a keeper, latch or other similar arrangement that will remain closed until manually opened. This includes self-closing, single action, double action, double locking snap hooks.
Strength Factor: The ratio of the minimum strength of a personal fall arrest/restraint system to the arresting force generated by a 250 pound person free-falling the length of the lanyard.
Suspension Belts: A design of simple or compound straps that may be secured about the wearer's body as an independent work support. These are commonly referred to as saddle belts, boatswain's chairs or tree trimmers' belts.
Tie Off: When a user wearing personal fall protection equipment connects directly or indirectly to an anchorage. The term also means the condition of an employee being connected to an anchorage.
Total Fall Distance: The maximum vertical distance between a wearer's body belt or body harness attachment points before and after the fall is arrested, including lanyard extension and/or deceleration distance.

CHAPTER 19. WELDING – FIRE & EXPOSURE CONTROL

Purpose

This welding safety policy is designed to ensure that employees are aware of the hazards associated with welding and to ensure proper fire protection. Welding is a hazardous operation, which must be performed in accordance with safety standards and by qualified trained employees. This chapter is to ensure work place safety and compliance with OSHA standards.
NOTE: For employers that weld, cut, and grind on Stainless Steel structures for fabrication and/or repair a hexavalent chromium exposure plan may be needed. Initial employee exposure monitoring must be done and if levels exceed the OSHA standard (1910.1026) a written plan is required.

Applicable Regulation

OAR 437, Division 2-1910.252 Gas and Electric Welding
OAR 437, Division 2-1910.1026 Hexavalent Chromium

Chapter Format

This chapter reviews welding safety procedures. Specific information on the welding hazards is also found in the Hazard Communication Program.

Definitions

Approved means listed or approved by a nationally recognized testing laboratory.

Welding and welding operator means any operator of electric or gas welding and cutting equipment.

All other welding terms used in OSHA standard are in accordance with American Welding Society - Terms & Definitions A3-0.969.

Policy

The following precautions are required to be taken by our employees who perform maintenance welding operations. Electric arc welders are also responsible to be trained in electrical hazards (See Chapter on Electrical Safety).

Responsibilities

Department director and supervisors are responsible to see that only trained employees are authorized to weld. Fire watch personnel will be trained in their duties by the Maintenance Supervisors. Management is required to see that adequate maintenance services are provided and used to ensure safe operating conditions and that all Energy Control Procedures (see Chapter on Lockout/Tagout Safety) are followed as they relate to maintenance welding on equipment.

1. Authorized Operators: Employees who are authorized to perform welding must follow all safety procedures as outlined in this chapter, by OSHA rules and manufacturer's recommendations. Employees are required to inspect their equipment daily prior to operation to ensure that all safeguards are on the equipment. Any problems are to be reported immediately to the employee's supervisor.

   All accidents will be reported immediately to the supervisor.

2. Personnel Director: Assist in providing employee training and auditing facilities for compliance with this chapter and OSHA regulations.
3. Safety Committee: The Safety Committee will include review of welding safety in their quarterly inspection activities.

Procedures

1. Basic Hazard Awareness: Safety in the many processes of welding and cutting requires certain precautions and standardized operating procedures. Welding is associated with five principal hazards. It is the responsibility of the employee supervisor and/or Safety Coordinator to ensure that all welders and fire watch personnel understand these hazards.
    a. Electric shock and burns must be guarded against when using welding equipment. The degree of risk depends on the type of welding process. Welders are to be trained in Electrical Safety.
    b. Fire Hazards:
        i. Flying sparks are the source of many industrial fires.
        ii. In areas where flammable gases, vapors, and dusts are present, only a tiny spark is needed to set off a fire or explosion. Flying pieces of molten metal can fall through cracks and openings as small as nail holes and ignite combustibles that are beyond the welder's visual range.
        iii. Hot metal that is being welded or cut can cause fires if allowed to contact flammable or combustible material such as drip pans, oily rags or combustible materials.
        iv. The torch flame used by the welder is another source of ignition and must be handled carefully. Compressed oxygen gas used in welding is a fire hazard because it supports and intensifies the rate of combustion of other materials
    c. Radiant energy hazards in welding include: ultraviolet light, infrared light and visible light.
        i. Exposure to the welding arc (ultraviolet rays) may result in very painful irritation of the eyes and skin.
        ii. Infrared rays act upon the eyes simply as heat and can cause a burn or irritation of the tissue affected.
        iii. The glare of excessive visible radiation can cause headaches, eye fatigue and loss of visual efficiency.
        iv. Protective eye wear must be worn during welding to prevent harm to the eyes from light energy
    d. Inhalation of Welding Fumes: Welding produces airborne exposures to a variety of potentially harmful gases and fumes. Fumes are generated from both the base metal and the wire or rod used in the process. The hazard level from metal fumes depends on the type of metal. In steel welding exposures include iron oxides, chromium, manganese, and nickel. The gases also vary with the type of shield gases used in arc welding, type of rods and fluxes used.
2. Authorized Employees: Welding shall be performed by qualified welders only.
3. Welding operations need to be performed away from flammable materials.
    a. If the object to be welded cannot be moved to a safe location, all movable hazardous materials should be moved to a safe location.

b. If this cannot be done, a Hot Work Permit will need to be issued by the Supervisor. The permit will describe the welding zone controls such as enclosing in fireproof blankets or other protective shields when materials in nearby areas can be affected by welding arcs, flames, sparks, spatter, slag or heat.
c. Fire protection equipment should be kept immediately at hand and ready for use. In critical areas, the fire protection equipment should be staffed while welding operations are being conducted.

4. Care must be taken against allowing mixtures of fuel gas and air to accumulate.
5. Flammable and other potentially hazardous materials should be cleaned from surfaces before welding is started.
   Note: The very high temperature of the welding air or flame can cause ignition of materials such as grease, oil or surface coating. These materials will also break down under heat to hazardous gases or fumes.
6. No welding, cutting or similar work should be undertaken on tanks, barrels, drums or other containers which have been contaminated with flammables unless the contamination is first removed so that there is no possibility of fire or emission of toxic vapors. (See Hot Work Permit).
7. Adequate ventilation should be provided as protection against accumulations of toxic fumes and gases. If such precautions cannot be taken, the welder should wear appropriate respiratory protection (See Personal Protective Equipment and Respiratory Protection).
8. If welding is to be done in enclosed or confined spaces, a specific "confined space" work permit will be required to be obtained from the management staff. The permit will detail the specific precautions that are required to perform welding in confined areas (See Confined Space Procedures).
9. Precautions need to be taken to avoid shock from electric welding operations.
   a. The welder should not stand in water while doing electric welding.
   b. Hot electrode holders should not be dipped in water.
   c. Cables with damaged insulation or exposed conductors must not be used, and should be replaced before any such work is attempted. If necessary to join lengths of cable, it must be done using only connectors designed specifically for the purpose.
10. Personal Protective Equipment: The face, body and hands should be covered to prevent burns from splatter, slag, sparks, or hot metal. Flame proof; heat-insulating gloves should be worn during welding operations. Wet or excessively worn gloves should not be used.
11. The eyes and skin should be protected against the glare and radiation from a welding arc or flame.
    a. Helpers and attendants should also be provided with eye protection.
    b. Other personnel in the vicinity of welding operations should be protected from reflections by suitable shields and barriers.
12. Respiratory equipment may be necessary if ventilation is not sufficient. Specific operation requirements should be made by your supervisor.
13. Gas cylinders must be handled carefully (breaking the neck from a full cylinder can turn the bottle into a missile).
14. Cylinders shall be secured to keep them from falling.
15. Acetylene cylinders must always be maintained in an upright position.
16. Oxygen cylinders should be separated from fuel-gas cylinders or other combustible materials by at least 20 feet or by a fire-resistant barrier at least 5 feet high.

a. Oxygen from supply cylinders should be checked to make certain they are not leaking, especially in enclosed spaces, where it can cause ignition of materials that are not normally highly flammable.
b. Grease and oil should be kept away from and never used to lubricate oxygen cylinder valves or regulators.
c. Do not handle oxygen cylinders with oily hands or gloves.
d. Before connecting an oxygen bottle, first open the valve slightly for an instant, then close and attach an oxygen regulator to the valve. Always stand to one side when opening the valve.

17. Empty gas cylinders should be marked and have their valves closed tightly. Valve protection caps should always be in place on those cylinders designed for caps, except when the cylinder is in use or being connected or disconnected.
18. Gas cylinders should be stored out of the direct rays of the sun and away from other sources of heat. Never strike an arc against a gas cylinder.
19. Do not use a hammer or wrench to open cylinder valves. If valves will not open by hand, notify the supplier. Always open the cylinder valve slowly.
20. Do not tamper with cylinder valves or try to repair them. Send the supplier a prompt report of the trouble, including the cylinder serial number, and follow the supplier's instructions.
21. Backflow or flashback preventers shall be installed on all oxygen/flammable gas welding and cutting units between the torch or blowpipe and the hoses.
22. Gauges shall be maintained in good condition. Cracked or missing glass shall be replaced prior to use.

Hexavalent Chromium Exposure Plan

A. Purpose and Scope:

1. This plan provides the required OSHA Exposure Assessment Plan per 1910.1026 Chromium (VI). The exposure assessment process is designed to comply with the "performance-oriented option" which permits current sampling data, historical data, and objective data to determine the TWA 8-Hour exposure for plant operations.
2. This plan is also the compliance plan for protection of employees' whose exposures exceed the action limit and the permissible exposure limit.

B. Key Definitions

1. Action level means a concentration of airborne chromium (VI) of 2.5 micrograms per cubic meter of air (2.5 µg/m3) calculated as an 8-hour time-weighted average (TWA).
2. Employee exposure means the exposure to airborne chromium (VI) that would occur if the employee were not using a respirator.
3. Permissible exposure limits (PEL). The employer shall ensure that no employee is exposed to an airborne concentration of chromium (VI) in excess of 5 micrograms per cubic meter of air (5 µg/m3), calculated as an 8-hour time-weighted average (TWA).
4. Regulated area means an area, demarcated by the employer, where an employee's exposure to airborne concentrations of chromium (VI) exceeds, or can reasonably be expected to exceed, the PEL.

C. Responsibilities

1. Department Management must ensure compliance with this program and supervisors are responsible to implement the program with their employees.
2. Safety Manager is responsible to ensure that adequate exposure monitoring is conducted, written program for Cr VI protection are developed and implemented by the affected departments and various records are appropriately maintained.

D. Applicable Rules

437-002-1910.1026 Hexavalent Chromium
437-002-1910.134 Respiratory Protection
437-002-1910.1200 Hazard Communication

E. The following processes result in exposure to CrVI during welding and grinding operations.
NOTE: Each employer must arrange for baseline and periodic sampling of employees' exposures during welding, cutting, grinding on stainless steel. The results of monitoring should be included in this plan.

F. **Employee Job Classes with CrVI Exposures Fabrication Welders/Grinders**, these employees weld tanks and parts together and make structures for the tanks. The processes involve: gas metal shielded wire arc welding; plasma arc cutting, carbon scarfing, electrode arc welding, and grinding down welds.

G. Compliance Issues

a. Exposure Determination and On-going Monitoring:
   i. Initial sampling done _____ shows exposures levels (in compliance or exceeding) the standard.
   ii. The follow up sampling will be based on quarterly to semi-annual monitoring based on OSHA requirements if the action limit or permissible exposure limit is exceeded.
b. Regulated Area: If overexposures occur to the employees during welding and grinding operations then the work area becomes a regulated area. The employees working in these areas will be trained and required to wear respiratory equipment when working with stainless steel. Warning signs are posted at the east personnel door entrance and other appropriate areas.
c. Methods of Compliance: Respiratory protection of either N100 or P100 filters are required for exposed personnel in the regulated area. Mechanical ventilation improvements are currently under engineering study. Long-term goal is to reduce exposure by engineering methods to less than the action limit.
d. Respiratory Protection: For complete respirator program see separate plan.
e. Emergencies: No emergency release of CrVI is possible based on the exposure processes.
f. Protective work clothing and equipment:
   i. The welders and grinders are provided coveralls that are part of special laundry process.
   ii. The coveralls used in the regulated area are laundered by an outside company that has been informed of the potential CrVI contamination.
   iii. The employees have assigned change room lockers for placing clean street clothing.
   iv. The welding leather coats and other style non-flammable clothing should be stored in the regulated area welding supply lockers.
   v. The leather gloves should also be stored with welding supplies and leather clothing in regulated area lockers.

H. Hygiene areas and practices:

a. The welders and grinders have wash facilities available at _____.
b. Laundry bins are located in the change room at _____
c. Prior to eating the employees will change out of the work coveralls at either the entrance to regulated area or on dirty side of the locker room.
d. The employees shall wash face and hands prior to entering lunchroom.

I. Eating and Drinking Areas:

a. The employees are not permitted to eat or drink in the regulated area.
b. Welders and grinders shall doff protective outer clothing prior to eating and wash face and hands.

J. **Housekeeping:** General housekeeping is done. Housekeeping methods prohibit the use of compressed air and dry sweeping of CrVI contaminated dust.

K. **Medical Surveillance:** The welders and grinders are part of CrVI medical surveillance program managed by _____ outside consulting occupational health physician and providers. The employees are part of the respiratory protection clearance program.

L. **Training:** All welders; grinders and supervisors are part of the CrVI training and information program. The employees shall be informed of the quarterly exposure monitoring results and any changes in compliance plan.

M. **Recordkeeping:** All exposure records, exposure assessment and related documents are maintained for a minimum of 30 years by the main office administration.

CHAPTER 20. ELECTRICAL SAFETY

This Electrical Safety Program was established to provide the maximum protection to our employees whenever they must work around any electrical hazards.
Employees involved in the maintenance, repair, and servicing of equipment that requires electrical energy or that work around overhead or underground electrical lines must follow these guidelines.
PLEASE ALSO REFER TO THE LOCKOUT/TAGOUT PROGRAM WHEN COMPLETING WORK ON EQUIPMENT AND MACHINERY

Applicable Legal Standards

State: OAR 437 Division 2, Subdivision S (Electrical Safety - 1910.301 – 1910.399)
Federal: 29 CFR 1910.399

General Responsibilities

1. Direct Supervisor: The Direct Supervisor is responsible for the overall implementation of the policy working with the Safety Committee and employees. The Direct Supervisor is also responsible to see that there are periodic audits and an annual review of the policy. . To protect employees from hazards when working with electrical equipment, tools and appliances the direct Supervisor must:
    a. Inspect all electrical equipment to make sure the equipment is safe
    b. Require that all electrical equipment is used for its approved or listed purpose.
    c. Require that all electrical equipment used or located in wet or damp locations is designed for such use.
    d. Require that electrical equipment that isn't marked (?) by the manufacturer can't be used.
    e. Identify disconnecting means (see also lockout/tagout program).
    f. Maintain electrical fittings, boxes, cabinets and outlets in good condition.
    g. Maintain all flexible cords and cables in good condition and use safely.
    h. Guard electrical equipment to prevent employees from electrical hazards.
    i. Require that all electrical equipment be effectively grounded.
    j. Require that all electrical equipment have overcurrent protection.
2. Authorized Employees: Only workers and supervisors who have received special training to recognize and understand the particular hazards involved with the tasks to be performed and the type and magnitude of electrical hazards are authorized to implement the procedure.
3. Affected Employees:
    a. An affected employee is one whose job requires him/her to perform maintenance on items powered by electrical energy, or that performs work around areas with overhead and/or underground electrical lines.
4. Training: A key component of this program is employee training. It is the supervisor's responsibility to see that all employees exposed to electrical hazards are trained on working around them. The authorized employees are to receive additional specialized training as outlined in this program. The training must be documented by the Direct Supervisor.

Inspection of Electrical Equipment

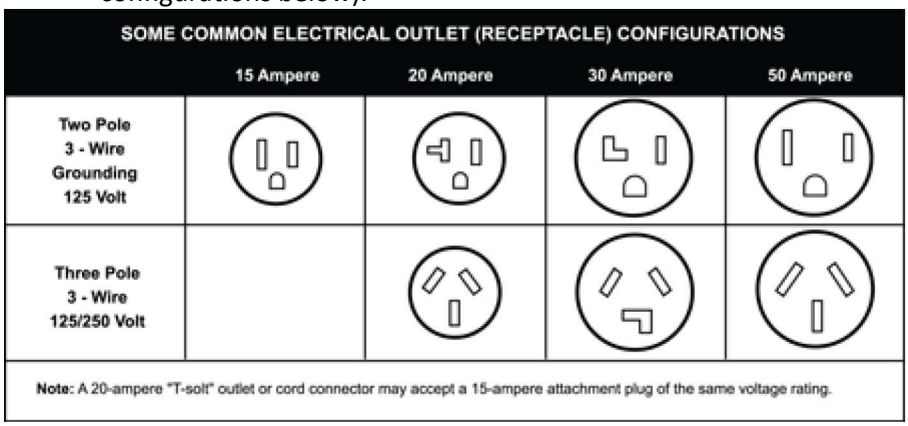
All electrical equipment must be inspected to make sure there are no recognized hazards likely to cause your employees' death or serious physical harm. Determine the safety of the equipment by using the following list:

1. Has been approved or listed by a recognized testing laboratory, such as Underwriters Laboratories (UL) or other approving agency.
2. Is approved, or listed as approved, for the purpose it is being used.
3. Have strong and durable guards providing adequate protection, including parts designed to enclose and protect other equipment.
4. Is insulated
5. Won't overheat under conditions of use.
6. Won't produce arcs during normal use.
7. Is classified by:
    a. Type
    b. Size
    c. Voltage
    d. Current Capacity
    e. Specific Use
    f. Other Factors

Ensuring Electrical Equipment Used for Approved or Listed Purpose

Electrical Outlets: Places on an electric circuit where power is supplied to equipment through receptacles, sockets and outlets for attachment plugs.
Receptacles: Outlets that accept a plug to supply electric power to equipment through a cord or cable.

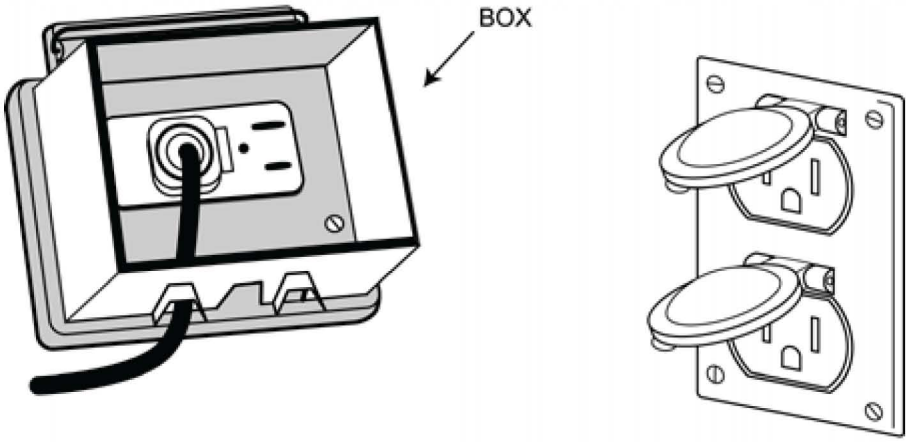
1. Electrical outlets should be rated equal or greater to the electrical load supplied.
2. The proper mating configuration should exist when connecting the attachment plug to the receptacle.
3. When electrical outlets, cord connectors, and receptacles are joined, they should accept the attachment plug with the same voltage or current rating (see common electrical outlet configurations below).



Ensure Electrical Equipment Used or Located In Wet / Damp Locations Is Designed For Such Use

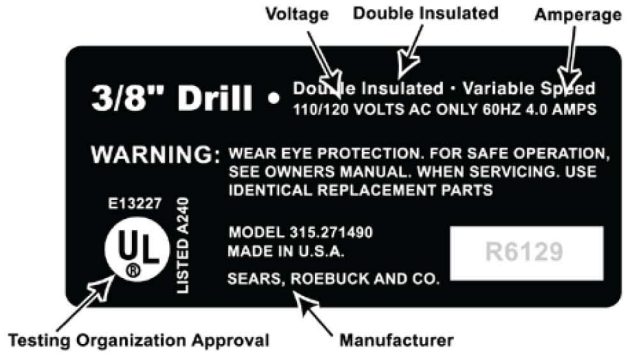
1. Fixtures and receptacles located in wet or damp locations must be approved for such use. They must be constructed or installed so that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.
2. Cabinets, fittings, boxes, and other enclosures in wet or damp locations should be installed to prevent moisture or water from entering or accumulating inside.
    a. In wet locations, these enclosures must be weatherproof.

b. Switches, circuit breakers, and switchboards located in wet locations must be in weatherproof enclosures.



Electrical Equipment Has Manufacturers Markings

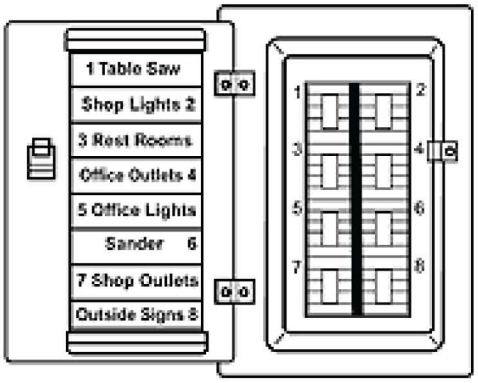
1. Markings on electrical equipment must be durable and appropriate for the environment.
2. Appropriate markings include:
    a. The manufacturers name or
    b. Trademark or
    c. The organization responsible for the product and
    d. Voltage, current, wattage or other ratings as necessary (see illustration below).



Electrical tools and equipment marked to show manufacturer, approvals and power requirements.

Identify Means of Disconnecting

1. The disconnect means (such as on/off switches and circuit breakers) must be marked to show when it's open and closed, and what equipment it controls unless located and arranged so the purpose is obvious.
2. Each service, feeder and branch circuit should be marked at its disconnecting means or overcurrent device to show when the circuit is open / closed, and what circuit it controls (unless located and arranged so the purpose is obvious).
3. Markings on the disconnect should be durable and appropriate to the environment that the disconnect is located.



Maintain Electrical Fittings, Boxes, Cabinets and Outlets in Good Condition

Openings and Covers

1. When conductors enter boxes, cabinets or fittings the following must be in place:
    a. The conductor must be protected (i.e. the wires must be protected from abrasions)
    b. Openings where conductors enter should be effectively closed so that the internal wiring is not exposed
    c. Any unused openings should be covered with blanks to ensure that employees are not exposed to the internal wiring
2. Provide pull boxes, junction boxes, and fittings with covers approved for the purpose.
3. Each outlet box must have a cover, faceplate, or fixture canopy in completed installations.
4. Covers for outlet boxes with openings for flexible cord pendants must have bushings to protect the cord, or have a smooth and well rounded surface where the cord touches the opening.
5. Metal covers must be grounded.

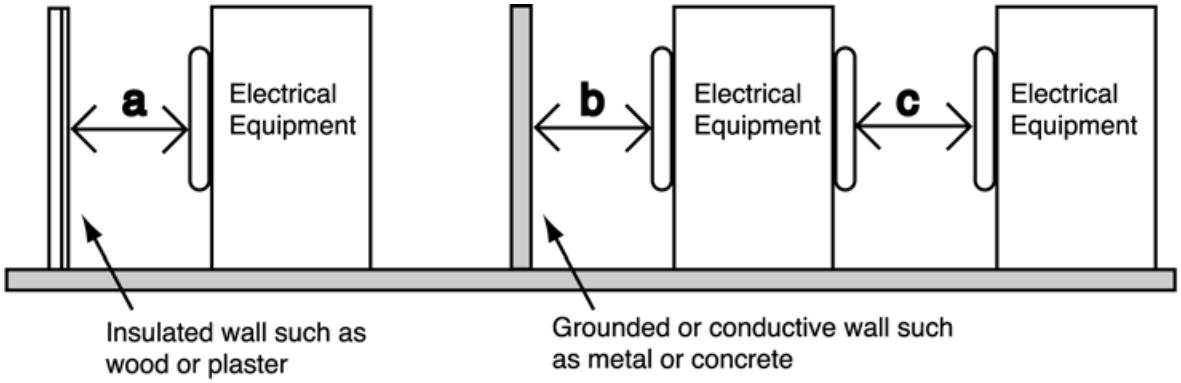
Areas in front of electrical panels, circuit breaker boxes, and similar equipment which operate at 600 volts or less:

1. Must have sufficient working area at least 30 inches wide for operational and maintenance of the equipment.
2. Must be kept clear and free of stored materials so that employees can access this equipment for servicing, adjustments or maintenance.
3. Should have at least one access route that is free of obstructions.
4. Have at least 3 feet (36 inches) of working space in front from floor to ceiling (measured from the exposed live part or the enclosure front). Consider installing signage that states this requirement to ensure that the 3 feet clearing is maintained at all times.
5. Should have adequate indoor lighting for clear viewing of the area.
6. Have at least 6 feet 3 inches of headroom

The table below shows the area you must keep clear depending upon the layout of the electrical equipment:

Conditions*	0-150 Volts to Ground	151-600 To Ground
A	3 ft	3 ft
B	3 ft	3 ½ ft
C	3 ft	4 ft

Minimum clear distances may be 2 feet 6 inches for equipment built or installed before 3/20/82.
*Conditions a, b, and c is as follows:
a = Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated bus bars operating at not over 300 volts aren't considered live parts.
b = Exposed live parts on one side and grounded parts on the other side.
c = Exposed live parts on both sides of the workspace (not guarded as provided in condition (a) with the operator between the panels)

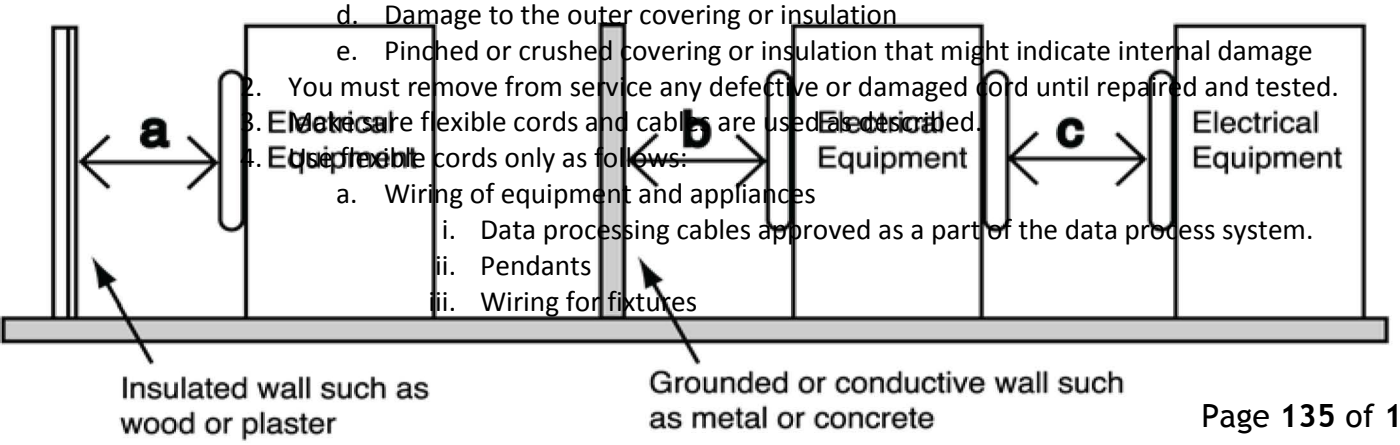


Distance are measured from live parts if they are exposed or from the enclosure front if live parts are enclosed.

Maintain All Flexible Cords and Cables in Good Condition & Use Safely

Exemption: Rules do not apply to cords and cables that are an internal part of factory assembled appliances and equipment, like the windings on motors or wiring inside electrical panels.

1. You must perform a visual inspection of all flexible cords and cables on portable cord and plug connected equipment and extension cords before use on each work shift. It is not required that you visually inspect portable cord and plug connected equipment and extension cords that stay connected once in place and aren't exposed to damage until they are moved. Defects and damage to look for include:
    a. Loose parts
    b. Deformed or missing pins
    c. External defects and damage
    d. Damage to the outer covering or insulation
    e. Pinched or crushed covering or insulation that might indicate internal damage
2. You must remove from service any defective or damaged cord until repaired and tested.
3. Make sure flexible cords and cables are used as described.
4. Use flexible cords only as follows:
    a. Wiring of equipment and appliances
        i. Data processing cables approved as a part of the data process system.
        ii. Pendants
        iii. Wiring for fixtures



Distance are measured from live parts if they are exposed or from the enclosure front if live parts are enclosed.

iv. Connecting portable lamps or appliances to an approved outlet with an attached plug
v. Connecting stationary equipment that is frequently changed with an attachment plug energized from an approved outlet.
vi. Preventing noise or vibration transmission
vii. Appliances that have been designed to permit removal for maintenance and repair if the appliance is equipped with an attachment plug energized from an approved outlet.
viii. Elevator cables
ix. Wiring of cranes and hoists.

5. If additional power supplies are needed, utilize an approved surge protector with multiple outlets.
6. Extension cords cannot be plugged into or piggybacked onto other extension cords or surge protectors.
7. If the light on the surge protector is flickering or off, remove the surge protector from service. This flickering or absence of a light indicates that a power surge has gone through the surge protector, and it is no longer working appropriately.
8. Cheater boxes plugged into electrical receptacles are not allowed.
9. Flexible cords cannot be used in the following ways:
    a. As a substitute for fixed wiring of a structure
    b. To run through holes in walls, ceilings, or floors
    c. To run through doorways, windows or similar openings
    d. To attach to building surfaces
    e. To conceal behind building walls, ceilings, or floors
    f. To raise or lower equipment
10. Flexible cords and cables are approved and suitable for the way they will be used and the location where they will be used.
11. Do not fasten or hang cords and equipment in any way that could cause damage to the outer jacket or insulation of the cord. Use tension relief devices.
12. Insulation on flexible cords and cables must be intact.
13. Flexible cords and electrical cords must be:
    a. Connected to devices and fittings so that any pulling force on the cord is prevented from being transmitted to joints or terminal screws on the plug.
    b. Used only in continuous lengths without splice or tap.
14. Do not plug or unplug equipment or extension cords of equipment that is energized using wet hands.

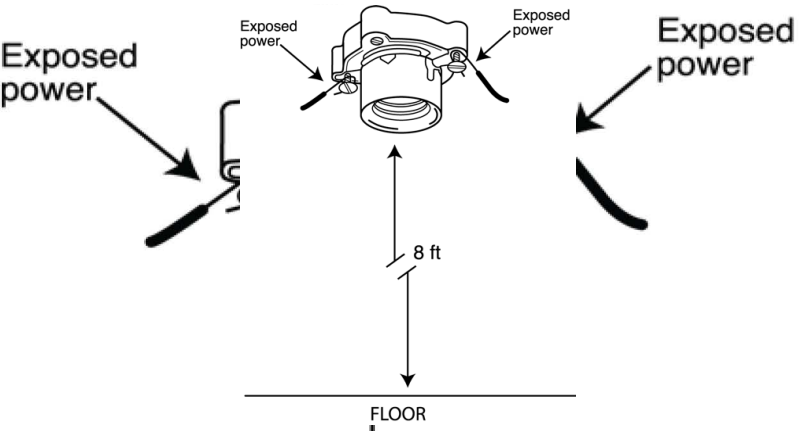
Temporary Use of Cords

1. Temporary electrical power and lighting installations that operate at 600 volts or less are used only:
    a. During and for remodeling, maintenance, repair or demolition of buildings and similar activities.
    b. Experimental or development work
    c. For no more than 90 days for;
        i. Christmas decorative lighting
        ii. Carnivals
        iii. Other similar purposes

2. Flexible cords and electrical cords used on a temporary basis must be protected from accidental damage by avoiding sharp corners and projections, especially where they pass through doorways and other pinch points.

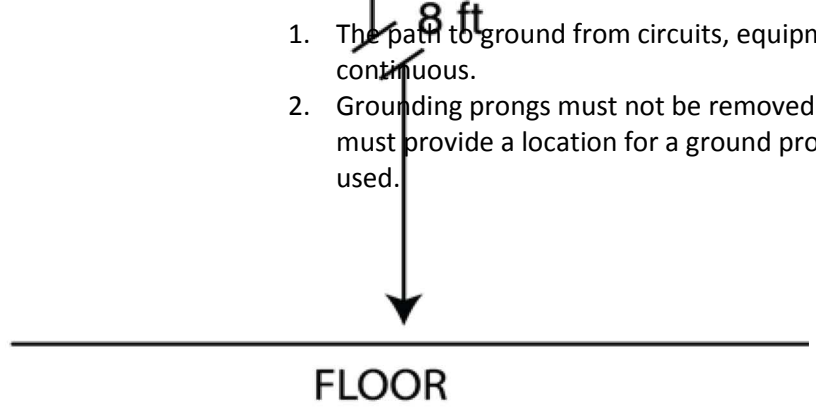
Guard Electrical Equipment to Protect Employees from Electrical Hazards

1. Guard live parts of electrical equipment operating at 50 volts or more against accidental contact by any of the following means:
    a. Approved cabinets or other forms of approved enclosures.
    b. By location in a room, vault or similar enclosure that is accessible only to employees qualified to work on the equipment. Entrances to rooms and other guarded locations containing exposed live parts must be marked with conspicuous warning signs forbidding unqualified persons from entering.
    c. By permanent, substantial partitions or screens so that only employees qualified to work on the equipment will have access within reach of the live parts. Any openings must prevent accidental contact with live parts by employees or objects carried by employees.
    d. By location on a balcony, gallery, or platform that will exclude unqualified personnel.
    e. By being located 8 feet or more above the floor or other working surface.
2. All electrical appliances, fixtures, lampholders, lamps, rosettes, and receptacles should not have live parts normally exposed to employee contact.
    a. Rosettes and cleat type lampholders at least 8 feet above the ground may have exposed parts.
    b. In locations where electric equipment would be exposed to physical damage, enclosures or guards must be so arranged and of such strength as to prevent such damage.



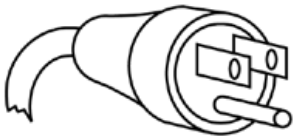
Ensure Electrical Equipment Is Effectively Grounded

1. The path to ground from circuits, equipment, and enclosures must be permanent and continuous.
2. Grounding prongs must not be removed from electrical cords and each electrical receptacle must provide a location for a ground prong. Cords without grounding prongs must not be used.

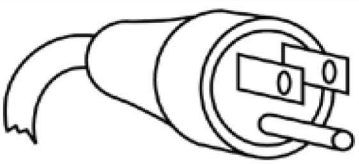


- Equipment connected by cord and plug must be grounded under these conditions:
- Equipment with exposed noncurrent carrying metal parts
- Cord and plug connected equipment which may become energized
- Equipment that operates at over 150 volts to ground

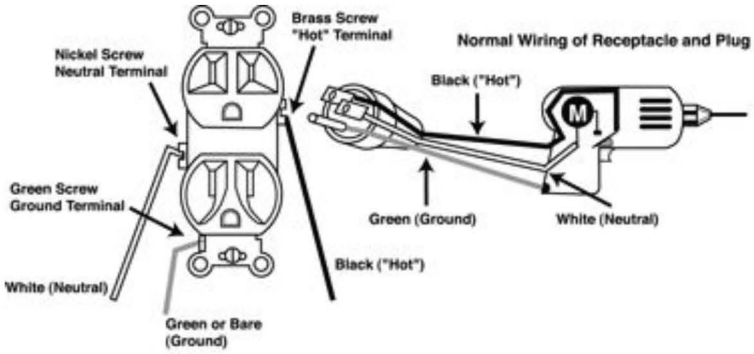
3. Equipment in hazardous locations.
    - You must ground the following type of equipment:
    - Hand-held motor-operated tools
    - Refrigerators
    - Freezers
    - Air conditioners
    - Clothes washers and dryers
    - Electrical aquarium equipment
    - Hedge clippers
    - Electric lawn mowers
    - Electric snow blowers
    - Web scrubbers
    - Tools likely to be used in damp or wet locations
    - Appliances used by employees standing on the ground, on metal floors or working inside of metal tanks or boilers.
    - Portable hand lamps.
4. Grounding can be achieved by using tools and appliances equipped with an equipment grounding conductor (3 prong plug and grounded electrical system).

Grounded Plug	Double Insulated
	Double Insulated 
Hand held tools and some other types of equipment must use a 3-wire plug or the tool label must show the tool as insulated by words or symbol.	

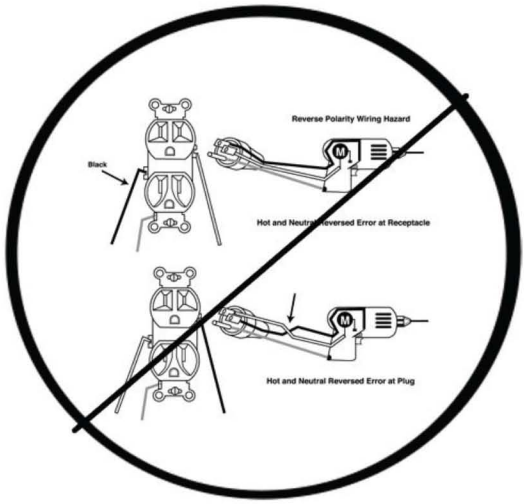
5. Exposed metal parts of fixed equipment that don't conduct electricity (but may become energized) must be grounded if the equipment is in a wet or damp location and isn't isolated.
6. Grounded wires must be identified and look different than the other conductors (wires).
7. Grounded conductors should not be attached to any terminal or lead to reverse polarity of the electrical outlet or receptacle. (See illustrations showing examples of wiring).
8. Grounding terminals or grounding-type devices on receptacles, cords, connectors, or attachments plugs should not be used for purposes other than grounding.

Grounded Plug	Double Insulated
	Double Insulated 
Hand held tools and some other types of equipment must use a 3-wire plug or the tool label must show the tool as insulated by words or symbol.	

Correct wiring



Incorrect Wiring



Reverse polarity wiring can cause a faulty tool to start as soon as it is plugged in or not stop when the switch is released. This could cause an injury. An extremely dangerous type of reverse polarity wiring switches the hot and ground wires. This causes the body of the tool or appliance to be "hot". Touching the tool and conductive surface can result in serious or even deadly shock.

Electrical Equipment Has Overcurrent Protection

1. All electrical circuits that are rated at 600 volts or less must have overcurrent protection.
2. Protect conductors and equipment according to their ability to safely conduct electrical equipment.
3. Overcurrent devices should not interrupt the continuity of grounded conductors unless all conductors are opened at the same time, except for motor running overload protection.
    a. Protect employees from electrical arcing or suddenly moving electrical parts by locating fuses and circuit breakers in safe places. If this isn't possible, install shields on fuses and circuit breakers.
4. The following fuses and thermo cutouts should have disconnecting mechanisms:
    a. All cartridge fuses accessible to nonqualified persons
    b. All fuses on circuits over 150 volts to ground
    c. All thermal cutouts on circuits over 150 volts to ground

    d. The disconnecting mechanism must be installed so you can disconnect the fuses or thermal cutouts without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.
5. Provide easy access to overcurrent devices for each employee or authorized building management personnel.
6. Protect the overcurrent devices by locating them away from easily ignitable material.
    a. They must be placed to avoid exposure to physical damage.
7. Circuit breakers:
    a. Must clearly indicate when they are open (off) and closed (on)
    b. That operate vertically must be installed so the handle is in the "up" position when the break is closed (on).
    c. Used as switches in 120-volt, fluorescent lighting circuit must be approved for that purpose and marked "SWD".
    d. That has arcing or suddenly moving parts should be shielded or located so employees won't get burned or injured by the operation of the circuit breaker.
8. Fuses that have arcing or suddenly moving parts must be shielded or located so employees won't get burned or injured by the operation of the fuses.

Ground-Fault Circuit Interrupters (GFCI)

1. OAR 437-003-0404 requires ground-fault circuit interrupters (GFCIs) on all 125-volt, single-phase, 15-, 20-, and 30-ampere receptacles that are not part of the permanent wiring of a building or structure.
2. If a permanently wired receptacle (not equipped with GFCI protection) is used for temporary power in a construction project, GFCI protection must be provided at the user end.
3. Portable plug-in and cord-type GFCIs are probably the most practical devices for construction workers who use cord sets for temporary power when there is no protection at the source.
4. GFCIs sense imbalances or differences along the electrical circuit and shut it down when needed. For this reason, GFCI can be critical to workers in wet environments. The rule for GFCI does not exempt work with intrinsically safe or double insulated tools.
5. GFCIs must either be built into the overall circuit, as part of the outlet receptacle, or using protected cord sets or GFCI devices.
6. GFCI protection can be anywhere on the circuit as long as it works effectively to protect the worker. Protection can be for the entire circuit, the outlet receptacle, or the extension cord.
7. For receptacles with more than 125 volts, single-phase, or more than 30-amp capacity, use GFCI or have a program that ensure equipment is grounded - see OAR 437-003-0404(3).
8. There must be a written description of assured equipment – grounding program at each job site that includes specific procedures.
9. One or more competent persons should be designated to run the program. (A competent person is someone who is capable of identifying hazards and has authority to promptly correct them).
10. Each day, inspect all extension cords and equipment (plug connected) for external defects before using them.
11. Conduct periodic tests of all grounding conductors for continuity and test each receptacle or plug to ensure that the grounding conductor is connected to the right terminal.
12. Testing is required before the first use, before the first use after a repair, before use after any event that could cause damage, and at least every three months (six months for fixed cords sets and receptacles not exposed to damage).

13. Record all tests by identifying each cord, receptacle, or piece of equipment and its test date or test interval. Keep the test record until a new record replaces it using logs, color coding, or other means. These records must be available on the job site.
14. All electrical receptacles located within 6 feet of a water source (i.e. sink) must have a GFCI on the receptacle or the circuit that controls that receptacle.

Working Around Buried Electrical Lines

1. Any time workers are required to start any in-ground work like digging or driving objects, OR-OSHA standard OAR 437-003-1926.651(b)(1) requires locating utilities before digging. (For more information on the standard read www.cbs.state.or.us/external/osha/pdf/rules/division 3/div3p.pdf.
2. The primary contractor or facilitator of the work must call the Oregon Utility Notification Center (OUNC) before starting work. In the Portland metro area, the number is (503) 246-6699. In all other areas of Oregon, call (800) 332-2344.
3. OUNC will then come out to locate and mark all utilities in the area where the work will be performed.
4. The contractor or facilitator of the work must ensure that power to any electrical lines in the area of work must be deenergized to ensure employee safety.
5. If a worker contacts an underground line or pipe, the contact could be fatal.
6. In addition, the contractor or person responsible for the work is responsible for all repair costs if they did not contact OUNC before starting work.

Working Around Overhead Electrical Lines

1. To protect those working near overhead power lines from accidental contact, the Oregon Legislature passed into law the High Voltage Overhead Line Safety Act. See ORS 757.800 and 757.805.
2. The law provides that no work activities take place within 10 feet of a high voltage overhead power lines until the following two requirements are met:
    a. The responsible party must notify the utility operating the line of the intended work activity.
    b. The responsible party and the utility must complete mutually satisfactory precautions for the activity.
3. As soon as you inform your local utility of your intended work activity, the following can occur:
    a. Coordination of work schedules
    b. Identification of temporary mechanical barriers to prevent contact with the lines.
    c. Temporary de-energizing and grounding of the lines
    d. Temporary raising or moving of the lines.

PPE

1. Employees must wear appropriate Personal Protective Equipment (PPE) when working around electrical sources. (See PPE standard at General Industry Div. 2 Subdivision I - 1910.137 Electrical Protective Equipment). Electrical protective equipment is subject to regular electrical tests to ensure they are still providing protection to the employee.
2. Electrical protective equipment shall be maintained in a safe, reliable condition.
3. Insulating equipment shall be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage. Insulating gloves shall be given an air test, along with the inspection.

4. Insulating equipment shall be stored in such a location and in such a manner as to protect it from light, temperature extremes, excessive humidity, ozone, and other injurious substances and conditions.
5. Insulating equipment with any of the following defects may not be used:
    a. A hole, tear, puncture, or cut;
    b. Ozone cutting or ozone checking (the cutting action produced by ozone on rubber under mechanical stress into a series of interlacing cracks);
    c. An embedded foreign object;
    d. Any of the following texture changes: swelling, softening, hardening, or becoming sticky or inelastic.
    e. Any other defect that damages the insulating properties.

CHAPTER 21. LADDER SAFETY

We take portable ladders for granted because they're so easy to use. Yet more workers are injured in falls from ladders than from any other elevated surface — roofs, scaffolds, balconies, even stairs. Why do workers fall from ladders? Most falls happen because workers select the wrong type of ladder for the job, the ladder is set up improperly, or the ladder shifts or slips unexpectedly. Workers also fall when their foot slips, they lose their balance, they overreach, or something knocks the ladder over.

How to Select Your Ladder

Which ladder is the right one for your job? You'll save time, energy and reduce your risk of injury if you select the correct one. Key factors are type and style, length, duty rating, and the material from which the ladder is made. Most portable ladders are either non-self-supporting, such as an extension ladder, or self-supporting, such as a standard stepladder. But there are also combination ladders that convert quickly from a stepladder to an extension ladder. You're likely to find the right size, shape, and type of ladder to accomplish your task within one of these categories.

1. **Extension ladders (non-self-supporting)**. Extension ladders offer the greatest length in a general purpose ladder. The ladder consists of two or more sections that travel in guides or brackets, allowing adjustable lengths. The sections must be assembled so that the sliding upper section is on top of the lower section. Each section must overlap its adjacent section a minimum distance, based on the ladder's overall length. The overall length is determined by the lengths of the individual sections, measured along the side rails. The table below shows the minimum overlap for two-section ladders up to 60 feet long

Ladder length	Overlap
Up to 36 feet	3 feet
36 to 48 feet	4 feet
48 to 60 feet	5 feet

   Most extension ladders are made of wood, aluminum, or reinforced fiberglass. Wood ladders can't have more than two sections and must not exceed 60 feet. Aluminum and fiberglass ladders can have as many as three sections; however, the overall length must not exceed 72 feet. Individual sections of any extension ladder must not be longer than 30 feet. Extension ladders can be used only by one person at a time.

   Is it necessary to "tie off" an extension ladder to prevent it from slipping? You don't have to tie off the ladder but you do have to ensure that the ladder cannot be accidentally moved or displaced. Tying off the top or bottom of a ladder is one way to ensure that it cannot be accidentally moved or displaced.
2. **Standard stepladders (self-supporting).** The standard stepladder has flat steps and a hinged back. It is self-supporting and nonadjustable. Standard stepladders should be used only on surfaces that have a firm, level footing such as floors, platforms, and slabs. They're available in aluminum, wood, or reinforced fiberglass and are intended to support only one worker at a time. Remember not to stand on the top step. Stepladders must have metal spreaders or locking arms and can't be longer than 20 feet, measured along the front edge of the side rails.

Can I use a standard stepladder like a straight ladder? Using a standard stepladder in a closed position is not a safe practice because it's more likely to slip on surfaces such as concrete and wood than a straight ladder. Standard stepladders are designed to be used only when the spreader arms are open and locked. If a standard stepladder doesn't meet your needs, choose an appropriate straight ladder or a combination ladder.

3. **Other types of stepladders include:**
    a. Two-way stepladder. The two-way stepladder is similar to the standard stepladder; however, each side of this ladder has a set of steps. One person can work from either side or two people can work from the ladder at the same time — one on each side.
    b. Platform ladder. The platform ladder is a special-purpose ladder that has a large, stable work platform. The ladder's length is determined by the length of the front edge of the side rail from the bottom of the ladder to the base of the platform; it can't exceed 20 feet.
    c. Orchard ladder. The orchard ladder is a special-purpose ladder for pruning and harvest work. It has a flared base and a single back leg that offers support on soft, uneven ground. Orchard ladders are intended for use by only one person at a time and can't be longer than 16 feet. Wood, aluminum, and reinforced fiberglass versions are available. A more rigid orchard ladder, the so-called double base version, incorporates a triangular box brace with stub rails attached to the bottom step. The ladder is available in wood or with a combination wood or fiberglass rail and metal step. Maximum length is 16 feet and it is intended for use by one person. Do not stand on the top step of an orchard ladder.

        Can orchard ladders be used on construction sites? Yes. In fact, orchard ladders are often safer on uneven or sloped ground than conventional stepladders. An orchard ladder is designed to be used on soil or turf so that each leg slightly penetrates the ground. Orchard ladders should never be used on concrete or hard surfaces. Tripod ladders that have spreader braces — also called electrician's ladders — are common on construction sites, too.
    d. Trestle ladder. A trestle ladder is a self-supporting portable ladder that has two sections hinged at the top, forming equal angles with the base. A variation of the trestle ladder, the extension trestle ladder includes a vertically adjustable single ladder that can be locked in place. (The single extension section must lap at least 3 feet into the base section.) Trestle ladders are used in pairs to support planks or staging. The rungs are not intended to be used as steps. The angle of spread between open front and back legs must be 5½ inches per foot of length. The length can't be more than 20 feet, measured along the front edge of the side rails. Rails must be beveled at the top and have metal hinges to prevent spreading. Metal spreaders or locking devices are required to keep the rails in place.
4. **Combination ladders and multipurpose ladders.** These ladders share many of the features of stepladders and extension ladders. Most quickly convert from standard stepladders to extension ladders, and many can be used in three or more variations — such as a stairway ladder, two-way stepladder, or a self-supporting scaffold base.

Determine the proper length

1. Standard stepladders. You should be able to reach about 4 feet above the top of the ladder when you're standing two steps down from the top. For example, you should be able to reach an 8-foot ceiling on a 4-foot ladder. Never use the top of a stepladder as a step.

2. Extension ladders. The total length of an extension ladder should be 7-10 feet longer than the vertical distance to the upper contact point on the structure — a wall or roofline, for example. Never stand on the ladder rungs that extend above a roofline.

Determine the duty rating

Manufacturers give ladders duty ratings, based on the maximum weight they can safely support. The worker's weight plus the weight of any tools and materials that are carried onto the ladder must be less than the duty rating. Before you purchase a ladder consider the maximum weight it will support. Don't subject it to a load greater than its duty rating. Duty ratings for portable ladders:

- Special duty (IAA) 375 pounds
- Extra heavy duty (I-A) 300 pounds
- Heavy duty (I) 250 pounds
- Medium duty (II) 225 pounds
- Light duty (III) 200 pounds

Determine the right material.

1. Wood. Wood provides a natural feel and good insulation against heat and cold. However, untreated wood ages quickly; wood ladders need a protective coat of clear varnish to keep the wood from drying and splitting. Also, wood ladders are heavy, particularly longer ones.
2. Aluminum. Aluminum ladders are lightweight and corrosion resistant. Aluminum will not crack or chip with rough handling; however, aluminum doesn't insulate well against heat and conducts electricity. Never use aluminum ladders for work near energized electrical lines.
3. Fiberglass. Fiberglass is durable, weather resistant, and nonconductive when clean and dry. Unlike wood, fiberglass won't dry out or split and provides better insulation against heat than aluminum. However, fiberglass ladders are heavier than comparable aluminum or wood ladders and can chip or crack with improper handling.
   Fiberglass ladders must also be handled and maintained with more care than wood ladders. After a few years, the reinforcing fibers in fiberglass rails may become exposed, resulting in a condition known as "fiber bloom." High humidity and exposure to strong sunlight can accelerate the condition. Fiber bloom doesn't affect a ladder's strength but it will affect the appearance and may cause users mild discomfort if exposed fibers penetrate their skin. Regular washing and waxing with a commercial non-slip paste wax will protect the ladder and reduce the potential for fiber bloom. Periodically coating the ladder with acrylic lacquer or polyurethane also will protect it.

How to set up your ladder

1. Setting up the ladder.
   a. Move the ladder near your work. Get help if the ladder is too heavy to handle alone.
   b. Lock the spreaders on a stepladder. Secure the lock assembly on extension ladders.
   c. Make sure there are no electrical wires overhead.
   d. Use traffic cones or other barriers to protect the base of the ladder if vehicles or pedestrians could strike it.
   e. When possible make sure that a non-self-supporting ladder extends at least 3 feet above the top support point for access to a roof or other work level. Do not step on rungs above the upper support.
   f. Angle non-self-supporting ladders properly. The length of the side rails from the ladder's base to the top support points (the working length) should be four times the distance from ladder's base to the structure (the set-back distance). Done correctly, this results in a 4:1 set-up angle.
   g. When available use a second person to heal or anchor the ladder.

2. Achieving a 4:1 set-up angle.
    - A non-self-supporting ladder should have a set-up angle of about 75 degrees — a 4:1 ratio of the ladder's working length to set-back distance.
    - Here's how to achieve it: Stand at the base of the ladder with your toes touching the rails. Extend your arms straight out in front of you. If the tips of your fingers just touch the rung nearest your shoulder level, the angle of your ladder has a 4:1 ratio.
3. Five steps for setting up an extension ladder.
    a. The ladder should be closed. Position the ladder with the base section on top of the fly section. Block the bottom of the ladder against the base of the structure.
    b. Make sure there is clearance and no electrical lines are overhead. Carefully "walk" the ladder up until it is vertical. Keep your knees bent slightly and your back straight.
    c. Firmly grip the ladder, keep it vertical, and carefully move back from the structure about one quarter the distance of the ladder's working length. This allows you to place it at the correct angle against the structure.
    d. Raise the fly section. After the bottom rung of the fly section clears the bottom rung of the base section, place one foot on the base rung for secure footing.
    e. Lean the ladder against the structure. The distance from the base of the ladder to the structure should be one quarter the distance of the ladder's working length. Make sure the ladder extends 3 feet above the top support points for access to a roof or other work level. Both rails should rest firmly and securely against the structure.

How to work safely on your ladder.

1. Wear shoes that have non-slip soles; make sure they are free of mud, oil, or anything else slippery.
2. Climb facing the ladder. Center your body between the rails and keep your hips square to the rungs. Hold the side rails with both hands; you have a better chance of avoiding a fall if a rung or step fails.
3. Hold the ladder with one hand and work with the other hand whenever possible.
4. Attach light, compact tools or materials to the ladder or to yourself.
5. Raise and lower heavy, awkward loads with a hand line or a hoist.
6. Use extreme caution when you're pushing or pulling materials.

How to inspect your ladder.

Neglected ladders quickly become unsafe ladders. Step bolts loosen, sockets and other joints work loose, and eventually the ladder becomes unstable. Periodic maintenance extends a ladder's life and saves replacement costs. Maintenance includes regular inspection, repairing damage, and tightening step bolts and other fastenings.

1. Inspect your ladder each time you use it. (A competent person must periodically inspect ladders for defects and after any occurrence that could make them unsafe.)
2. Replace lower steps on wooden ladders when one-fourth of the step surface is worn away. Typically, the center of a step receives the most wear. Mineral abrasive or other skid-resistant material reduces wear.
3. Don't paint wood ladders; paint conceals defects.
4. Clean and lightly lubricate moving parts such as spreader bars, hinges, locks, and pulleys.
5. Inspect and replace damaged or worn components and labels according to the manufacturer's instructions.
6. Inspect the rails of fiberglass ladders for weathering, fiber bloom, and cracks.
7. Keep the ladder away from heat sources and corrosive materials

How to store your ladder.

You'll extend a ladder's life by storing it properly:

1. Use a well-ventilated storage area.
2. Store wood and fiberglass away from excessive moisture, heat, and sunlight.
3. Keep them away from stoves, steam pipes, or radiators.
4. Store non-self-supporting ladders in flat racks or on wall brackets that will prevent them from sagging.
5. Secure them so that they won't tip over if they are struck.
6. Keep material off ladders while they are stored.

How to transport your ladder.

When you carry a ladder, keep the front end elevated, especially around blind corners, in aisles, and through doorways. You'll reduce the chance of striking another person with the front of the ladder.

When you transport a ladder in a truck or a trailer, make sure that it's properly supported parallel to the bed. Pad the support points with soft, nonabrasive material such as rubber or carpeting and tie the ladder securely to eliminate chafing and road shock.

Safe practices checklist.

1. When portable ladders are used for access to an upper landing, the side rails extend at least 3 feet above the upper landing. When this is not possible, the ladder is secured to a rigid support at its top and a grab rail is available to help employees get off the ladder.
2. Ladders are free of oil, grease, and other hazards that could cause slips.
3. Ladders are not loaded beyond the manufacturer's duty rating.
4. Ladders are used only for the purpose for which they were designed.
5. Extension ladders are placed so that the working length of the ladder is four times the horizontal distance from the ladder's base to the structure — a 4:1 ratio.
6. Ladders are used on stable, level surfaces or they are secured so that they cannot be displaced.
7. Ladders are not used on slippery surfaces unless they are secured or they have slip-resistant feet.
8. All ladders, except stepladders, have non-slip safety feet.
9. Employees are prohibited from placing ladders on boxes, barrels, and other unstable objects.
10. Ladders used near passageways, doorways, or driveways are protected so that vehicles or pedestrians do not strike them.
11. The area around the top and bottom of a ladder is free from slipping and tripping hazards.
12. The top of a non-self-supporting ladder is placed so that both rails are supported equally.
13. Ladders are not moved, shifted, or extended when they are occupied.
14. Ladders that could contact exposed energized electrical equipment have nonconductive side rails.
15. Portable aluminum ladders have legible signs reading "CAUTION: Do Not Use around Electrical Equipment" or equivalent wording.
16. The top step of a stepladder is not used as a step.
17. Cross bracing on the rear section of a stepladder is not used for climbing unless the ladder is designed for that purpose.

18. Employees are prohibited from using ladders that are missing steps, rungs, cleats, or have broken side rails or other faulty parts.
19. A competent person inspects ladders periodically for defects and after any occurrence that could damage them.
20. Defective ladders are marked as defective, or are tagged “Do Not Use” and removed from service until they are repaired.
21. Repaired ladders meet their original design criteria before they are returned to service.
22. Employees face ladders while climbing or descending.
23. Employees use at least one hand to grasp the ladder when they are climbing and descending.
24. Employees do not carry objects or loads that could cause them to lose their balance.
25. Employees who use ladders receive training by a competent person in proper use, placement, and handling.
26. Employees know the hazards associated with ladder use and follow procedures that minimize the hazards.
27. Retraining is provided periodically to ensure that employees maintain their knowledge of proper ladder use, placement, and handling.

OR-OSHA requirements for portable ladders.

1. General Industry 2/D - Walking-working surfaces
   437-002-0026 Portable Ladders
2. Ladder requirements frequently cited by Oregon OSHA
   1926.1053(b) (1), Portable ladders do not extend 3 feet above an upper landing.
   1926.1053(b) (4), Ladders not used for their designed purpose.
   1926.1053(b) (13), Top of ladder may not be used as a step.
3. LADDER REGS
   437-002-0026(5) (a-h)
   a. Step spacing must be uniform and not more than 12 inches. Steps must be parallel and level when the ladder is in the normal use position.
   b. All joints, attachments and working parts of ladders must be tight and not worn to a point that causes a hazard. Do not use ladders with damaged or bent parts.
   c. Replace frayed or badly worn rope.
   d. Safety feet and other auxiliary equipment must in good condition.
   e. Inspect ladders and remove from use any with defects. Ladders awaiting repair must be tagged, "Dangerous, Do Not Use."
   f. There can be no dents, breaks or bends in the side rails or rungs;
   g. Do not make ladders by fastening cleats across a single rail.
   h. Portable ladders must have non-slip bases.

   437-002-0026(7) (h) (A-C)
   a. Secure ladders as necessary when used on surfaces that may allow slipping or movement. Use one of the following methods:
      i. non-slip bases on the ladder feet; or,

      ii. steel points or safety shoes on the ladder feet, designed for the type of surface the ladder is on; or

      iii. Nail the ladder to the floor, or set it against secured blocks or chocks.

Definitions.

Check- A lengthwise separation of the wood that occurs across the rings of annual growth.
Cleat- A rectangular ladder crosspiece placed on edge, upon which a person may step while ascending or descending.
Competent person-One who can identify existing and predictable hazards where employees work and who can take prompt corrective measures to eliminate the hazards.
Decay- Disintegration due to action of wood-destroying fungi. Also known as dote or rot.
Extension ladder- A non-self-supporting portable ladder that is adjustable in length. It consists of two or more sections in guides or brackets that permit length adjustment. Length is designated by the sum of the lengths of each section, measured along the side rails.
Extension trestle- A self-supporting portable ladder that is adjustable in ladder length, consisting of a trestle ladder base and a vertically adjustable single ladder with means for locking the ladders together. Length is designated by the length of the trestle ladder base.
Fastening- A device that attaches a ladder to a structure, building, or equipment.
Platform ladder- A self-supporting ladder of fixed size with a platform at the working level.
Rungs- Ladder crosspieces on which a person steps when ascending or descending.
Sectional ladder- A non-self-supporting portable ladder, nonadjustable in length, consisting of two or more sections that function as a single ladder. Its length is designated by the overall length of the assembled sections.
Single (or straight) - A single section non-self-supporting portable ladder, ladder nonadjustable in length. Its length is measured along a side rail.
Special-purpose- A general-purpose portable ladder with modified ladder features for specific uses.
Stepladder- A self-supporting portable ladder, nonadjustable in length that has flat steps and a hinged back. Length is measured along the front edge of a side rail.
Steps- The flat crosspieces of a ladder on which a person steps when ascending or descending.
Tread- The horizontal member of a step.
Tread width- The horizontal distance from front to back of the tread, including nosing.
Trestle ladder- A self-supporting portable ladder, nonadjustable in length that consists of two sections hinged at the top to form equal angles with the base. Length is measured along the front edge of a side rail.

Chapter 22. Mandatory Alcohol and Drug testing program for Commercially Licensed Drivers (CDL).

Mandatory Alcohol and Drug testing program for Commercially Licensed Drivers (CDL)-City employees who are required to hold a Commercial Drivers License (CDL) as a requirement of their position are covered by this program. The program requires pre-employment, random, post accident, reasonable cause and return-to-duty/follow-up drug/alcohol testing in accordance with all applicable provisions of the U.S. Dept. of Transportation, Federal Register Part 49 CFR, Part 40, 382 and 391.