FACILITIES
&
MAINTENANCE
PROCEDURES

FACILITIES MANAGEMENT DEPARTMENT
WORKPLACE SAFETY PROCEDURES
2026

The information listed in this procedure manual has been developed to maintain conformity with PSD60 polices, and local, state and federal regulations by providing guidelines on proper safety procedures to follow while employed with the PSD60 Facilities Management Department. The procedures listed herein supersede previous Department procedures where applicable.

This information is in no way intended to be all inclusive or supersede any PSD60 Policy. Detailed information regarding Personnel and other PSD60 Policies may be found at www.pueblod60.org

PSD60 FACILITIES DEPARTMENT

Operational Safety Procedures

INDEX

Title **Page**

I. Asbestos Control

1. Asbestos Control ……..…… 5
2. Asbestos Control Procedure……7
3. Overview of Asbestos Facts……16

II. Health & Safety

1. Health & Safety Procedure…….. 17

III. Confined Spaces

1. Confined Space Entry……19
2. Confined Space Entry Procedure……27

IV. Excavation and Trenching Safety

1. Excavation & Trenching ……..…… 42
2. Excavation & Trenching Procedure…… 44

V. Lock Out/Tag Out

1. Lock Out/Tag Out ……..…….. 48
2. Lock Out/Tag Out Procedure…….. 51

VI. Scaffold & Aerial Platform Safety

1. Scaffold/ Aerial Platform Safety ……..……..55
2. Scaffold Safety Procedure……... 57
3. Aerial Platform Procedure…… 80

VII. Respiratory Protection

1. Respiratory Protection…….. 83
2. Respiratory Protection Procedure…….. 85

VIII. Environmental Protection

1. Environmental Protection ……..… 93
2. Environmental Protection Procedures……99

IX. General Safety

1. General Safety ……...109
2. General Safety Procedures……...110
   a. General Safety……110
   b. Safety Responsibility……..110
   c. Ear Protection…… 110
   d. Electrical Safety…….. 111
   e. Eye & Face Protection……... 111
   f. Floor Safety…… 112
   g. Foot & Hand Protection…… 112

h. Hand Tool Safety…… 113
i. Head Protection…….. 114
j. Ladder Safety…… 114
k. Lifting & Carrying…… 115
l. Power Tool Safety……. 116
m. Vehicle Operation……... 117
n. Welding & Cutting…….. 118
o. Air Conditioning - HVAC…… 119
p. Building Automation Systems…….. 120
q. Carpentry…… 121
r. Electrical…….. 121
s. Custodial…….. 121
t. Painting…… 122
u. Plumbing…….. 124
v. Preventive Maintenance…… 125
w. Utility & Moving……126
x. Warehouse & Storerooms……126
y. Back Safety…… 127
z. Bloodborne Pathogens…….. 127
aa. Grounds Maintenance……127
bb. Safety For Grounds Personnel……130
cc. Chainsaw Safety……131
dd. Mower Safety…….. 131
ee. Office Safety……132
ff. OSHA Right To Know…… 134

PURPOSE

The purpose of this Procedure is to establish a program of responsibilities for the protection of PSD60 employees and the public from hazardous exposure to asbestos.

AUTHORITY

Asbestos control requirements are provided by the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Colorado Department of Public Health and Environment.

DEFINITIONS

Pertinent definitions may be found within the Asbestos Management Plan Procedure. This Procedure is maintained by the Facilities Management Department and may be obtained by contacting the Executive Director of Facilities & Construction.

APPLICABILITY

This Procedure applies to all Facilities Management Department employees.

COMPLIANCE

Specific guidelines for the identification, hazard level assessment, monitoring, removal and cleanup of asbestos-containing materials and record keeping have been mandated by law. An Asbestos Management Plan (AMP) has been established by the Facilities Department to ensure the safety of the general public, building occupants, PSD60 employees, contractor personnel and asbestos abatement workers. The contents of the AMP reflect those requirements as they apply to PSD60. The Asbestos Management Plan Procedure is maintained by the Facilities Management Department.

PROCEDURES

Procedures for asbestos control are outlined in the Asbestos Management Plan, maintained by the Facilities Management Department.

RESPONSIBILITIES

1. The Executive Director of Facilities & Construction shall ensure that the requirements of the Asbestos Management Plan are complied with, that adequate training and equipment are made available to Facilities employees, and that consistency of the AMP procedure is maintained.
2. Staff and supervisors shall ensure that all requirements of the Asbestos Management Plan (AMP) are complied with, that PSD60 is kept informed of asbestos issues, that appropriate coordination occurs for asbestos abatement projects, and that adequate training information is provided to support asbestos management activities.
3. Supervisors/Lead Workers shall ensure that Facilities employees comply with relevant AMP requirements during the performance of scheduled work, that all training requirements are kept current, and that abatement efforts are coordinated within the schedule.

4. The Project Coordinator shall ensure that contractors shall comply with all applicable AMP requirements in the performance of scheduled work and shall coordinate all abatement efforts within the schedule.
5. Project Coordinator shall serve as the Asbestos Program Coordinator and implement, coordinate, and document administration of the Asbestos Management Plan. The Asbestos Program Coordinator shall be directly responsible for verifying and maintaining current building survey data, conducting abatement efforts, assist in the training for staff, in addition to reviewing/managing Capital/Major Renovation projects for asbestos locations and providing technical assistance to PSD60.
6. Facilities employees shall report all actual/potential contact with ACM to their direct-report Supervisor for proper coordination of scheduled work.
7. Asbestos Program Coordinator shall notify building occupants when an asbestos abatement project is to be performed and provide project progress information until complete.
8. The Executive Director shall maintain all records for PSD60 employees involved with asbestos work.

EXCLUSIONS

None.

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

ASBESTOS CONTROL PROCEDURE

PURPOSE

The purpose of this procedure is to safeguard and control the hazards to the staff and community from exposure to asbestos. This will be accomplished by compliance with related asbestos control requirements promulgated by the Environmental Protection Agency (EPA), the Occupational Safety and Health Agency (OSHA), Colorado Department of Public Health & Environmental (CDPHE), and the PSD60 Facilities Department. The contents of this procedure reflect those requirements as they apply to PSD60.

DEFINITIONS

ACM: Any material that contains more than 1% Asbestos.

ACBM: Asbestos containing building material(s).

AIR MONITORING: Sampling of asbestos fiber concentrations within the asbestos control area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.

AMOSITE (BROWN ASBESTOS): An asbestiform mineral of the amphibole group containing approximately 50% Silicon and 40% Iron (II) Oxide, and is made up of straight, brittle fibers, light gray to pale brown in color, found in approximately 5% of all ACM.

AMP: Asbestos Management Plan. Record of ACBM within a building with procedures for response actions, operations and maintenance. Presently located in the Facilities office.

ASBESTOS: A generic name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible in air, and are separable into fibers. Asbestos is found in a variety of building and building related materials, such as thermal insulation, roofing shingles, paint, ceiling tiles, floor tiles, and chemical fillers, as well as in brake linings and other auto products. Asbestos includes the asbestiform varieties of chrysotile (serpentine); crocidolite (riebeckite); amosite (cummington-grunerite); anthophyllite; tremolite; and actinolite. Asbestos is hazardous to your health. Your body cannot expel asbestos.

ASBESTOS PROGRAM MANAGER: The Facilities Department representative trained in asbestos management and responsible for establishing guidelines.

CHRYSOTILE (WHITE ASBESTOS): The only asbestiform mineral of the serpentine group containing approximately 40% each of silica and magnesium oxide. It is the most common form of asbestos used in buildings and is found in approximately 95% of all ACM.

CIH: Certified Industrial Hygienist

CLASS I: Removal of TSI, surfacing ACM and presumed asbestos containing material (PACM). Class I tasks will normally be done by a certified asbestos contractor.

CLASS II: Removal of asbestos that is not TSI or surfacing ACM. Includes wallboard, floor tile, roofing materials, mastics and siding. Staff working with Class II tasks require a total of 24 hours of training.

CLASS III: Repair and maintenance operations where ACM is likely to be disturbed. Staff working with Class III tasks require a total of 16 hours of training.

CLASS IV: Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up same. Staff working with Class IV tasks require 2 hours of "Awareness" training.

FRIABLE ASBESTOS MATERIAL: Material which is capable of being crumbled, pulverized or reduced to powder by hand pressure, or which under normal use in maintenance, emits or can be expected to emit fibers into the air.

HEPA FILTER EQUIPMENT: High efficiency particulate air equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97% efficient for retaining particles and fibers with a minimum dimension of 0.3 micrometers or larger.

MAJOR FIBER RELEASE: The dislodging of 3 sq. ft. or more of surfacing material or 3 linear ft. or more of pipe insulation.

NIOSH PAT Program: National Institute for Occupational Safety and Health Proficiency Analysis Testing Program.

NVLAP: National Voluntary Accreditation Program.

PACM: Presumed Asbestos Containing Material - presume that all Thermal System Insulation (TSI) and spray applied and/or troweled-on surfacing material installed before 1981 contain asbestos until proved otherwise through testing by a CIH or an accredited inspector.

PCM: Phase Contrast Microscopy

TEM: Transmission Electron Microscope

TSI: Thermal System Insulation

PERMISSIBLE EXPOSURE LIMIT (PEL): Although there is no known safe level of exposure, limits of exposure to an airborne concentration of asbestos not to exceed 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average (TWA) as determined in 29 CFR 1926.58, Appendix A.

PERSONAL MONITORING: Sampling of asbestos fiber concentrations within the breathing zone of an employee (i.e., attached to or near the collar or lapel near the worker's face).

TIME WEIGHTED AVERAGE (TWA): Representative samples are required to establish the eight (8) hour time weighted average. The TWA is an eight (8) hour time weighted average airborne concentration of fibers, longer than five (5) micrometers per cubic centimeter of air. Work shifts which differ from an eight (8) hour duration may require adjustments of the standard which applies.

TSI: Thermal System Insulation

WORKER PROTECTION: All workers are covered by the OSHA Asbestos Construction Standard or EPA Worker Protection Rule for employees who perform operation and maintenance activities.

RESPONSIBILITIES

1. The Executive Director shall ensure that all PSD60 staff are kept informed of asbestos issues, that appropriate emphasis is placed on asbestos abatement projects, and that adequate training and equipment are provided to support asbestos control activities. Also, to secure funding for long term abatement and

renovation actions, scheduled maintenance/repair actions (as necessary), emergency response actions, training materials and classes for all Facilities staff and for proper respiratory and related equipment needed by Facilities personnel.

2. Facilities management and supervision staff shall coordinate PSD60 compliance with asbestos safety and health requirements including updating of the Asbestos Management Plan, maintaining training records of all appropriate Maintenance and Custodial staff, preparing emergency response actions, posting required signs, notifying and consulting with building staff on locations of asbestos within a building, and planned abatement activities.
3. Project Coordinators shall ensure that contractors comply with all applicable asbestos requirements in the performance of their contracts and notify building staff when an asbestos abatement project is scheduled for their buildings.
4. Executive Director shall ensure the proper scheduling of response actions related to asbestos and ensure the training of all staff.
5. Facilities management and supervision staff shall ensure that maintenance and custodial staff comply with the relevant asbestos safety and health requirements and receive the necessary training to perform their duties.
6. Custodial Supervisor shall receive sufficient training to identify flooring which might contain asbestos and be able to perform necessary floor upkeep.
7. PSD60 Environmental Safety Officer should have sufficient training to handle asbestos identification requirements in all assigned facilities.
8. Building staff shall notify occupants of their building when an asbestos abatement project is to be performed.
9. The Executive Director shall maintain medical records for employees involved with asbestos work.
10. The Administrative Assistant to Facilities & Construction shall assist in the coordination of required initial training and annual training thereafter for affected staff.

PROCEDURE

MEDICAL SURVEILLANCE AND EXPOSURE LIMITS

According to the OSHA standard for asbestos, every employer must provide, or make available, medical surveillance programs for all employees who:

1. Are engaged in work involving exposure to asbestos or other mineral fibers at or above the level of 0.1 fiber/cc air, 8 hr TWA for 30 or more days in a 12-month period of time.
2. Are required by this procedure to wear negative pressure respirators.
3. People who are medically supervised have permissible exposure limit (PEL) of 0.1 fibers/cc air, 8-hour TWA with a short duration of excursion level of 1.0 fiber/cc for 30 minutes.
   NOTE: 0.1 fiber/cc means that 0.1 fibers are present in each cubic centimeter (cm) of air. Since there are 1,000,000 cc in 1 cubic meter (m), there would be 100,000 fibers in a cubic meter.

Prior to receiving formal Asbestos Worker training, staff shall undergo a complete physical exam including an EKG, pulmonary function test, and chest x-ray, to determine the fitness of the worker candidate. Staff who receive formal Asbestos Worker training shall also undergo annual pulmonary function testing in accordance

with OSHA guidelines. These physicals and tests shall be conducted by a licensed physician. Results of physicals and tests shall be confidential and maintained by the Human Resources Department.

CLEANING TECHNIQUES

Routine cleaning of PSD60 facilities shall not result in disturbing ACM. No cleaning methods can be used that could result in the release of asbestos fibers. Mechanical stripping, drilling or sanding of asbestos containing floors, mastics, walls and ceilings, hose spraying of pipe insulation, and all similar activities that could disturb ACM shall not be used.

RENOVATION/DEMOLITION PROJECTS

No renovation project can proceed without a complete inspection by a licensed asbestos inspector. Major maintenance, renovation and/or demolition projects involving ACM must be evaluated by a qualified Asbestos Inspector for appropriate action. In most cases removal of ACM will be required prior to the major maintenance, renovation or demolition project. Such removal shall be performed by a qualified Asbestos Abatement Contractor. If a current project is determined to involve previously unidentified ACM, all related work shall be stopped until a qualified Asbestos Inspector can evaluate the necessity for abatement.

MAINTENANCE/REPAIR WORK

1. Personnel entering areas identified as containing ACM or PACM (i.e., mechanical equipment spaces, crawl spaces, etc.) shall be appropriately trained.
2. Maintenance staff, who in the course of a normal or emergency situation may be required to remove or disturb ACM or PACM shall receive Asbestos Worker training.
3. Equipment repairs involving the disturbance of ACM or PACM shall be halted, and a qualified Asbestos Inspector shall be contacted to determine the proper response action.
4. All maintenance work involving the disturbance of any amount of ACM or PACM shall be brought to the attention of a qualified Asbestos Inspector by the project supervisor. A qualified Asbestos Abatement Contractor shall be hired to remove the subject material before repairs can be made.
5. Non-friable ACBM must be treated as friable when the material is about to become damaged.
6. Periodic surveillance must be conducted at least once every 3 months (continuously by maintenance personnel) to include:
    a. Visual inspection.
    b. Record any condition changes, date and name.
    c. Submit recorded changes to the Asbestos Program Manager (include in management plan).
7. At least once after completion of the inspection and before initiation of any response action an initial cleaning shall be performed with the following procedures:
    a. HEPA vacuum or steam clean carpets.
    b. HEPA vacuum or wet clean floors and all other horizontal surfaces.
    c. Dispose of debris, filter, mop heads and clothes in sealed leak tight containers.

8. When maintenance and operations activities disturb friable material:
    a. Restrict entry to the area and post signs.
    b. Shut off or modify the air handling system.
    c. Use necessary controls to inhibit spread of released fibers with wet methods, protective clothing, HEPA vacuums, mini enclosures and glove bags.
    d. Clean fixtures or other components.
    e. Place debris and other cleaning materials in a sealed leak tight container.

FIBER RELEASE EPISODES

A MAJOR fiber release episode is defined as falling or dislodging more than three square or linear feet of friable ACBM. Perform the following procedure:

1. The Asbestos Program Manager
    a. Restrict entry to the area and post signs.
    b. Contact a qualified Asbestos Inspector.
    c. Shut off or modify the air handling system.
    d. Initiate response actions using accredited persons.

A MINOR fiber release episode is defined as falling or dislodging three (3) square or linear feet or less of friable ACBM. Perform the following cleanup procedure:

1. Restrict entry to the area and post signs.
2. Contact a qualified Asbestos Inspector.
3. Shut off or modify the air handling system.
4. Saturate the debris.
5. Place asbestos debris in a sealed, leak tight container.
6. Repair the area or implement appropriate response action.

RESPONSE ACTIONS

Response actions shall be selected, designed, implemented and conducted in a timely manner by accredited persons:

1. Project Designer/Manager
2. Contractor
3. Workers

Damaged or significantly damaged thermal system (pipes, boiler, etc.):

1. Repair damaged area.
2. Remove damaged material if repair is not feasible.
3. Maintain all material and coverings in intact and undamaged condition.
4. Damaged friable surfacing ACBM or damaged friable miscellaneous ACBM:
5. Encapsulate, enclose, remove or repair damaged material.
6. Use local circumstances to help choose occupancy, use patterns, economic concerns, etc.

Significantly damaged friable surfacing ACBM or significantly damaged friable miscellaneous ACBM:

1. Immediately isolate unless not necessary.
2. Remove the material, enclose or encapsulate.
3. Potentially significant damaged friable surfacing, thermal or miscellaneous ACBM:
4. Use control measures to prevent damage, deterioration or delamination.
5. Remove ASAP, unless:
6. Prevention controls are effectively implemented.
7. Other response actions are preferred because of technological or economic factors.

COMPLETION OF RESPONSE ACTIONS

The Project Coordinator shall:

1. Conduct visual inspection to determine proper completion.
2. Perform aggressive clearance air sampling as specified by a qualified Asbestos Inspector.

Request air sample analysis by licensed lab when available:

1. PCM (Phase Contrast Microscopy)
2. The lab shall be NIOSH PAT (Proficiency Analysis Test) Program proficient.
3. Analyzer shall be a graduate of NIOSH 582 or equivalent course.
4. NIOSH 7400 methodology shall be utilized.
5. TEM (Transition electron Microscope)
6. NVLAP (National Voluntary Laboratory Analysis Program) accreditation within six months of availability.

Firms shall submit proof of accreditation for the lab and any subcontracting labs.

SPECIFIC PROCEDURES

Floor Tile - All floor tiles on site shall be assumed to contain asbestos unless otherwise identified by a qualified Asbestos Inspector. Floor tile manufacturers have warned that all 9" x 9" and most 12" x 12" tile manufactured before 1986 did contain asbestos. More importantly, the fibers are usually too small to be detected with an optical microscope.

Acceptable practices for floor tile maintenance:

1. Wet buffing with soft (red/pink) buffing pads.
2. Chemical stripping and cleaning.
3. Waxing - a good, waxed surface provides a natural barrier to abrasion and fiber release.
4. Loose Floor Tile:
5. Report all loose floor tile incidents to the Asbestos Program Manager.
6. Completely loose pieces of floor tile shall be picked up and placed into plastic bags. The bags can be placed in cardboard boxes to prevent puncture.
7. The Asbestos Program Manager shall direct the proper disposal of all tile containing asbestos.

8. Carpet shall be placed over the bare mastic (glue) until the tile is replaced.
9. No partially loose tile shall be pried up.
10. Non-acceptable practices for floor tile maintenance:
11. Dry buffing.
12. Dry stripping.
13. Sanding.
14. Drilling.
15. Carpet removal where carpeting has been installed over floor tile.
16. Removal by untrained personnel.

Sheet Flooring - Both the hard and soft forms of this product typically have a non-asbestos vinyl surface and as asbestos-containing backing. This backing may contain as much as 55% asbestos. Normal cleaning procedures can be used on undamaged sheet good products.

Damaged sheet flooring shall be reported to the Asbestos Program Manager.

Non-acceptable practices for sheet flooring:

1. Cutting.
2. Drilling.
3. Sanding.
4. Removal by untrained personnel.

Transite Panels - This extremely hard product is often found in siding on buildings, lining of cooling towers and the lining of chemical exhaust hoods in the science labs. The Asbestos Program Manager shall be informed of any activities that will physically disturb the panels. No physical modification (cutting, drilling, sanding, etc.) is allowed. The access panels in lab hoods are attached with screws that tap into a metal brace behind the panel. Therefore, the access panels can be removed safely without the danger of fiber release.

Transite Piping, Conduits and Ducts:

1. The Asbestos Program Manager shall be informed of any activities that may disturb these products.
2. These products shall only be removed, cut or repaired by specially trained personnel.

Kemstone Panels and Counter-tops - This asbestos containing material is similar to transite and is found in exhaust hood linings and counter-tops. The procedure for Transite Panels shall apply to Kemstone as well.

CONDITIONS

ASBESTOS RELATED DISEASES

ASBESTOSIS; Asbestosis is a disease characterized by fibrotic scarring of the lung. This is a restrictive lung disease which reduces the capacity of the lung. The common symptom is shortness of breath. Asbestosis is prevalent among workers who have been exposed to large doses of asbestos fibers over a long period of time. Accordingly, there is a clear dose-response relationship between asbestos exposure and developing this disease. This means the greater the asbestos exposure, the more likely asbestosis will develop. All forms of asbestos have demonstrated the

ability to cause asbestosis. Like all diseases associated with asbestos exposure, it may take many years for the disease to show up. The typical latency period for asbestosis is 15-30 years. An asbestos abatement worker using work practices and protective equipment described in OSHA 29 CFR 1926 will have little likelihood of developing asbestosis as a result of his or her work.

LUNG CANCER: There are many causes of lung cancer, of which asbestos is only one. While employees exposed to industrial concentrations of asbestos in years past have an increased risk of getting lung cancer (5X), their risk is not as great and the cigarette smoker (10X). However, a cigarette smoker who also works with asbestos is more than 50 times more likely to contract lung cancer than the normal population. Like asbestosis, there exists a long-time lag between initial exposure and the occurrence of lung cancer, typically 20-30 years. There appears to be a dose response relationship between asbestos exposure and lung cancer, although no "safe level" has yet been determined. Again, proper protection and work practices should minimize the risk of abatement workers getting lung cancer due to asbestos.

MESOTHELIOMA: The asbestos associated disease of greatest concern in asbestos abatement is probably mesothelioma. Fortunately, it is also the rarest (200-250 cases per year). Mesothelioma is a cancer of the chest cavity lining (mesothelium). Mesothelioma can also occur in the lining of the abdominal cavity. If it occurs in the chest cavity it is called pleural mesothelioma. In the abdominal cavity, it is known as peritoneal mesothelioma. This type of cancer spreads very rapidly and is always fatal. The exact cause remains unknown. There does not appear to be any increased risk of getting mesothelioma for smokers and there does not appear to be a dose response relationship between asbestos exposure and mesothelioma. Like the other diseases of asbestos, mesothelioma takes 30-40 years after initial exposure if it occurs.

OTHER DISEASES: Several other diseases are found more often among persons exposed to asbestos than the normal population. These include cancer of the esophagus, stomach, colon, and pancreas, pleural plaques, pleural thickening and pleural effusion. Again, the importance of using the proper work practices and respiratory protection cannot be over emphasized to minimize the occurrence of these diseases due to unnecessary asbestos exposure.

POSSIBLE LOCATIONS OF ACM:

- SURFACING MATERIALS; Sprayed or troweled on walls and ceilings.
- THERMAL INSULATION; Batts, blocks, pipe coverings and gaskets.
- CEMENTITIOUS: Panels, roof tiles, clapboard, shingles and mud on pipe joints.
- PAPER PRODUCTS: Corrugated and millboard.
- ROOFING FELTS: Found on shingles and pipelines.
- COMPOUNDS: Caulking, putties, adhesives, joint compound, roofing asphalt, mastics, roof putty, plaster, stucco, spackles and sealants.
- CEILING TILES: Lay-in and glued on.
- FLOORING TILE AND SHEETS: Vinyl asbestos tile (VAT), asphalt asbestos tile, sheet goods such as resilient vinyl sheet flooring.
- WALL COVERINGS: Vinyl wallpaper.
- PAINTS AND COATING: Roof coatings, airtight aluminized paint.
- AUTO PRODUCTS: Brake pads, clutch and gaskets.

TRAINING

A minimum of two (2) hours of annual awareness training is required for all custodial and maintenance staff who may work in a building that contains ACBM. This training is to be scheduled through the Administrative Assistant with the Asbestos Program Manager and the appropriate supervisor. All Training shall be documented in the staff's personnel file. This training shall include:

1. A review of this procedure.
2. The characterization of asbestos.
3. Information on health effects, asbestos related diseases/conditions.
4. Locations of ACBM throughout each building in which they work.
5. Recognition of damage, deterioration and delamination of ACBM.
6. Name and phone number of the Asbestos Program Manager and the location of the Asbestos Management Plan.

Additional training shall be identified by maintenance supervisors. This training and required physicals are to be scheduled by the Administrative Assistant with the Asbestos Program Manager and the appropriate supervisor and required documentation filed appropriately in the staff records.

RECORDKEEPING

1. All documents relating to asbestos materials shall be maintained for at least 30 years. The Asbestos Program Manager shall be responsible for maintaining a well-organized, duplicate file of all asbestos documentation excluding staff medical data.
2. The Human Resources and Facilities Department shall maintain all health-related records for all staff involved with asbestos work.
3. The Administrative Assistant shall maintain all training records.
4. All asbestos-related files shall be identified with warning labels (provided by the Asbestos Program Manager) to prevent inadvertent destruction.
5. This procedure shall be reviewed annually.

OVERVIEW OF ASBESTOS FACTS

- Asbestos is a natural mineral that comes from rock; over 3,000 products contain asbestos.
- Mostly found in buildings built before 1974, but could be found in buildings built in the early 80's.
- Odds of getting asbestos related disease are a million to one.

Characteristics of Asbestos:

- Doesn't burn - used for fire protection.
- Thermal insulator - used to encase pipes (keep cold things cold, and hot things hot).
- Sound insulator - used in ceiling tiles and plaster.
- Strong and flexible - used for floor tiles.
- Will not rot, mold or corrode.
- Microscopic - fibers can't be seen with the naked eye.

Dangers of Asbestos

- Only dangerous when friable (can be touched, crumbled by hand sending fibers into the air) - should be kept wet if cleaning up.
- Could cause asbestosis (hardening of the lung) or lung cancer.
- Smokers are at greater risk of contracting asbestos related diseases than non-smokers.

How Asbestos gets into your lungs (path taken):

- Must get past hairs in nose;
- Past mucous lining the throat;
- Past the cilia in the windpipe (which is affected by smoking);
- White blood cells do not attack fibers;
- Fibers get lodged in air-sacs and air-sac hardens around fiber.

When to contact your supervisor:

- If you come in contact with Asbestos that is friable;
- If you have questions/concerns that something may contain asbestos;
- If you want to know where it is located in your building;
- If you have been asked to strip a floor containing asbestos.

Asbestos Program Manager:

Environmental Safety Officer - ACM Project Coordinator: (719) 549-7204

PURPOSE

This procedure provides guidelines and instructions to assist Facilities staff in their compliance with the applicable provisions of the Occupational Safety and Health Act as well as pertinent health and safety laws.

DEFINITIONS

Occupational Safety and Health Act: OSHA is the federal legislation that guides and mandates specific safety policies and procedures for applicable organizations, including PSD60 Facilities.

Environmental Protection Agency: The EPA is the federal agency that oversees management of, among other things, toxic substances and waste.

APPLICABILITY

This procedure applies to all Facilities employees.

PROCEDURE

The Facilities Department will comply strictly with EPA, OSHA, waste management and other safety and health related codes, laws and standards. Safety violations should be reported to a supervisor. See "Responsibilities" for additional details.

RESPONSIBILITIES

1. The Human Resources Dept. shall ensure that employee candidate for hire are required to undergo a physical examination upon initial employment. Such examinations are provided at PSD60 expense.
2. Supervisors are responsible for the following:
    a. Provide the means for complying with EPA, OSHA, waste management, and other safety and health related codes, laws, and standards.
    b. Assist in the implementation of this Procedure and report willful noncompliance to the appropriate supervisor for resource management.
    c. Require all contractors performing work to abide by this Procedure and OSHA regulations.
    d. Conduct safety inspections and submit reports to responsible supervisors and administrative officials.
    e. Investigate all accidents and submit reports of findings to appropriate officials.
    f. Conduct safety training for department personnel in cooperation with the Executive Director and other officials.
    g. Assist PSD60 departments with information to develop safety procedures for their specific needs.
    h. Maintaining high standards of health and safety within their assignments and require compliance with all safety regulations.
    i. Provide necessary protective equipment for their personnel.
    j. Post available information on safety regulations and procedures within assigned work area(s).

k. Be familiar with and enforce all safety regulations and procedures that apply to their assigned area(s).

l. Ensure that appropriate protective equipment is available and used properly by their personnel.

m. Provide appropriate health and safety instructions for their personnel.

n. Require all "safe operating" instructions and procedures regarding the operation of equipment, machines and vehicles to be posted and obeyed.

o. Report all accidents and hazards to the Executive Director or department head and the Environmental Safety Officer.

p. Immediately report any situation that may result in injury, loss of life, or property damage to the Executive Director.

3. Employees are responsible for the following:

   a. Comply with safety instructions and procedures posted in each work area; report unsafe conditions or acts to their supervisors.

   b. Follow all instructions and procedures on the operation of equipment, machines, and vehicles.

   c. Refrain from any unsafe act that might endanger self or others.

   d. Dress properly for specific work assignments and use protective equipment correctly.

   e. Report immediately to his/her supervisor, all accidents and/or injuries.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

PURPOSE

The purpose of this Procedure is to establish a uniform procedure for the safe entry into confined spaces and to protect staff and contractor personnel while working in confined spaces such as manholes, chases, tanks, high voltage electrical enclosures, etc.

SCOPE AND APPLICATION

This Procedure describes basic mandatory practices and procedures for employee entry into and work within confined spaces. Ref. OSHA Sec 5(a)(1), 5(a)(2), and 29CFR1910.

RESPONSIBILITIES

1. The Executive Director shall ensure that staff is kept informed of confined space issues, and that appropriate emphasis is placed upon construction projects.
2. Supervisors shall ensure that adequate training (with written records documenting the latest training) and equipment are provided to support Facilities staff. The Environmental Safety officer will coordinate department compliance with safety and health requirements, including coordinating emergency response actions.
    a. Maintain the written entry permit system to ensure that Facilities staff comply with the relevant safety and health requirements during the performance of their duties and that they are provided with the proper equipment.
    b. Ensure training of staff. Such training shall be conducted for new staff and annually for all staff on the contents of this procedure and other related Facilities procedures. Training shall be documented in the employees' records.
    c. When confined spaces and the hazards in those spaces are identified, the information gathered shall be forwarded to the Facilities Department Procedure Manual.
3. Environmental Safety Officer shall update this procedure and the various attachments to ensure compliance with OSHA standards and ensure that all copies of the attachments are updated.
    a. Environmental Safety Officer shall conduct and/or coordinate all training as related to this procedure and maintain all documented training records.
4. The Entry Supervisor is responsible for the following:
    a. Know the hazard(s) and potential hazards that may be encountered during entry. Information shall include:
        i. The mode.
        ii. Signs or symptoms.
        iii. Consequences of the exposure.
        iv. Unauthorized entry or entry attempt.
        v. The detection of a condition/hazard not authorized by the permit.

vi. The occurrence of an injury or near-miss during entry.

vii. A change in use, configuration of the space or reclassification from a permit required confined space to a non-permit required confined space.

viii. Entrant concerns about the entry (procedure, tools, etc.).

ix. Determines procedures for coordination of entry when personnel from multiple employers will work simultaneously.

b. When work is completed sign, remove, and file the canceled entry permit and all attachments. If the permit space must be evacuated for any unacceptable condition, the entry supervisor shall:

i. Order the entrants to exit the confined space.

ii. Note the unacceptable condition on the entry permit.

iii. Cancel the entry permit.

iv. Retain the canceled Entry Permit with all attachments for annual review.

v. Correct the unacceptable condition if re-entry is planned. Document the corrective action.

vi. Verify the conditions in the confined space are acceptable if re-entry is planned.

vii. Issue a new Entry Permit before allowing re-entry.

5. The Attendant is responsible for the following:

a. Prior to worker entry into the confined space, the attendant shall have determined the location of the nearest functional telephone and verified the working condition of the two-way radio or other means of communications in case of an emergency.

b. Know the hazard(s) that may be encountered during entry. Information shall include:

i. The mode

ii. Signs or symptoms

iii. Consequences of the exposure.

iv. Is aware of possible behavioral effects of hazard exposure in authorized entrants.

c. Continuously maintains an accurate count of authorized entrants in the permit space and accurately identifies who is in the permit space. Records the names of any additional entrants on the Entrant Roster. Records all times of entry and exit of each entrant on the Entrant Roster.

d. Remains outside of the permit space during operations until relieved by another attendant.

e. Communicate with entrants continuously to monitor status and to alert entrants of the need to evacuate the space.

f. Monitors activities inside and outside the space and orders entrants to evacuate the space immediately under any of the following conditions:

i. If the attendant detects a prohibited condition.

ii. If the attendant detects the behavioral effects of hazard exposure in an authorized entrant.

iii. If the attendant detects a situation outside the space that could endanger the authorized entrants.

iv. If the attendant cannot effectively and safely perform his duties.

v. An evacuation alarm is sounded.

vi. Notify the Entry Supervisor immediately after taking the emergency action required, of the emergency, unusual situations or conditions.

vii. Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

viii. Take the following actions when unauthorized persons approach or enter a permit space while authorized entry is under way:

ix. Warn the unauthorized persons that they must stay away from the permit space.

x. Advise the unauthorized persons that they must exit immediately if they have entered the permit space.

xi. Inform the authorized entrants and the Entry Supervisor if unauthorized persons have entered the permit space.

xii. Performs non-entry rescues.

xiii. Does Not Perform and May Not be assigned any duties that will interfere with the attendant's primary duty to monitor and protect the entrants.

6. Entrants are responsible for the following:

a. Know the hazard(s) that may be encountered during entry. Information shall include:

b. The mode

c. Signs and symptoms

d. Consequences of the exposure.

e. Communicating with the attendant continuously to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.

f. Alert the attendant whenever:

i. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.

ii. The entrant detects a prohibited condition.

g. Exit from the permit space as soon as possible when:

i. An order to evacuate is given by the attendant or the entry supervisor.

ii. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.

iii. The entrant detects a prohibited condition.

iv. An evacuation alarm is activated.

h. After the entry is completed, ensure that the confined space is clear and free of hazards. This includes but is not limited to the following:

i. Removal of tools, equipment and debris from the confined space at the completion of the job.

j. Confirm that all blinds are removed, all valves properly opened or closed, lines are properly reconnected, all locks and/or tags are removed, and the space is completely ready to be returned to service.

k. Clean the surrounding area.

DEFINITIONS

ATTENDANT - means an individual assigned to remain immediately outside the entrance to the confined space, to monitor authorized entrants, to perform all the attendant's duties assigned by this procedure and who may render assistance as needed to entrants inside the space without entering the space.

BLIND, BLINDING or BLANKING - means the absolute closure of a pipe, line or duct, to prevent passage of any material by fastening a solid plate or "cap" across the bore and which is capable of withstanding the maximum potential upstream pressure and temperature.

CALIBRATION or RECALIBRATION - means a laboratory or bench-top resetting of alarm points, spans and zeros, if applicable, according to manufacturer specifications. Calibration or re-calibration shall be conducted by a factory authorized service center, a factory trained technician, or a trained PSD60 technician.

CONFINED SPACE - means any space:

a. That is large enough and so configured that a staff can bodily enter and perform assigned work.

b. Not intended for continuous employee occupancy,

c. Having a limited means for worker entry or exit due to the number, size or location of openings.

d. That has doors and other portals through which a person could walk are not considered limited means for entry and exit. However, a space containing such a door or portal may still be deemed a confined space if an entrant's ability to escape in an emergency would be hindered.

Note 1. Confined spaces generally include, but are not limited to: storage tanks, bins, boilers, ventilation or exhaust ducts, sewers, manholes, underground utility vaults, tunnels and pipelines. Open top spaces more than four feet in depth such as: pits, tubs, and vaults may also be confined spaces if the four above criteria are met

Note 2. Burner service operations where staff work in/under crawl spaces and tight boiler/furnace rooms will generally not be considered "confined spaces".

CPR - Cardio-Pulmonary Resuscitation

DOUBLE BLOCK AND BLEED - means the closure of a line, duct or pipe by locking and tagging a drain or vent to open to the atmosphere in the line between two locked-closed valves.

ENGULENT - means the surrounding and effective capture of a person by finely divided particulate matter or a liquid. There is potential for engulent when such particulate matter or liquid exists in a sufficient quantity or at a sufficient pressure to surround a person before a normal exit can be affected.

ENTRANT - any staff who enters a confined space. A QUALIFIED ENTRANT is a person who:

a. Has a valid need to enter a confined space.

b. Has been trained as required by this procedure.

c. Has been briefed on the hazards of the confined space and is properly protected from all such hazards by use of appropriate engineering controls or personal protective equipment.

ENTRY - means:

a. Any action resulting in any part of the staff's body breaking the plane of any opening of the confined space.

b. Includes any ensuing work activities inside the confined space.

c. All periods of time that the confined space is occupied.

ENTRY PERMIT - means the written or printed document provided by Facilities to allow and control entry into a permit space for a stated purpose during a specified time. The confined space entry permit must be properly completed prior to any confined space entry and must be posted at the portal of the confined space in use.

ENTRY PERMIT LOG - Facilities document which is used to assign numbers to Entry Permits.

ENTRY SUPERVISOR (QUALIFIED PERSON) - means:

a. A person who is trained in all aspects of this procedure and on how to recognize the hazards of the confined space, how to evaluate those anticipated hazards, and shall be capable of specifying necessary control measures to ensure worker safety.

b. The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry, overseeing entry operations and for terminating entry.

c. The entry supervisor may or may not actually participate throughout the entry but shall be on the scene during the issuance of any confined space entry permit and be readily available for consultation.

EMERGENCY - means any occurrence, internal or external to the permit space, of an event including the failure of hazard control or monitoring equipment that could endanger entrants.

FIELD CHECKED - means the checking of the accuracy of an instrument's response to a known concentration of a gas: a method of checking an instrument for a proper response in the field. It is a check of the instrument's functionality and is a pass/fail or go/no-go check. When an adequate response is not obtained, the equipment shall be removed from service and adjusted or repaired by a factory authorized service center, a factory trained technician, or a trained PSD60 technician.

GROUND FAULT CIRCUIT INTERRUPTER (GFCI) - means a device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the over-current protective device of the supply circuit.

HAZARDOUS ATMOSPHERE - means an atmosphere presenting a potential for death, disablement, injury, acute illness, or the inability to escape unaided from a permit space, from one or more of the following causes:

a. A flammable gas, vapor, or mist in excess of 10% of its Lower Flammable Limit (LFL).

b. An oxygen- deficient atmosphere containing less than 19.5% oxygen by volume or an oxygen enriched atmosphere containing more than 23.0% oxygen by volume.

c. An atmospheric concentration of any substance listed in Subpart Z of Part 1910 Standards above the listed numerical value of the Permissible Exposure Limit (PEL). In the case of substances for which no PEL has been established, the Environmental Safety Officer must be contacted to establish a safe atmospheric concentration prior to entry.

d. An airborne combustible dust at a concentration that obscures vision at a distance of 5 feet or less.

e. A concentration of an air contaminant that is considered Immediately Dangerous to Life or Health (IDLH) by any published source, including the manufacturer's Material Safety Data Sheet (SDS).

f. A condition Immediately Dangerous to Life or Health (IDLH) as defined in this procedure.

HOT WORK - Work that produces arcs, sparks, flames, heat, or other sources of ignition. This includes but is not limited to burning, welding, grinding, riveting and space heating.

HOT WORK PERMIT LOG - Facilities document which is used to assign numbers to Hot Work Permits.

INTRINSICALLY SAFE - Equipment that is explosion proof and will not produce sparks or other ignition sources.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH) - means any condition that poses an immediate or delayed threat to life, or which is likely to result in acute or immediately severe health effects or that would interfere with an individual's ability to escape unaided from a confined space.
NOTE: Only qualified personnel with proper protective equipment may be permitted to enter IDHL confined space.

IMMEDIATE SEVERE HEALTH EFFECTS - means that an acute clinical sign of serious, exposure-related reaction is manifested within 72 hours of exposure.

INERTING - displacement of the atmosphere by a nonreactive gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.
NOTE: This procedure (INERTING) produces an IDHL oxygen deficient atmosphere.

LFL - Lower Flammable Limit - the minimum concentration of a flammable gas or vapor in air (usually expressed in percent by volume at sea level), that will ignite if an ignition source is present.

LINE BREAKING - the intentional opening of a pipe, line or duct that is/or has been carrying flammable, corrosive or toxic material, an inert gas and/or fluid at a volume, pressure, or temperature capable of causing injury.

LOCKOUT OR TAGOUT - means placing locks or tags on the energy isolating device(s) in accordance with Facilities Lockout/Tagout Procedure. The key for any lock used for Lockout shall remain with the person working within the confined space.

OXYGEN DEFICIENT ATMOSPHERE - an atmosphere containing less than 19.5 percent oxygen by volume.

OXYGEN ENRICHED ATMOSPHERE - an atmosphere containing more than 23.0 percent oxygen by volume. (VOSH Standard.)

PEL - Permissible Exposure Limit

PERMIT REQUIRED CONFINED SPACE or PERMIT SPACE - those spaces which meet the requirement of Confined space, and which also pose health or safety hazards such as:

a. A current or potentially hazardous atmosphere.

b. Potential worker entrapment (from inwardly converging walls or downward sloping floor).

c. A potential for engulent.

d. Contains any other serious safety or health hazard.

PPE - Personal Protective Equipment

PURGING - the method by which gases, vapors or other airborne contaminants are displaced.

RESCUE TEAM - means those staff that have been designated and provided training to perform rescues from confined spaces PRIOR to any confined space entries. A rescue team from the City of Pueblo emergency services will normally be the rescuers of choice PROVIDING THAT THE TRAINING REQUIREMENTS OF THIS PROCEDURE HAVE BEEN MET.

RETRIEVAL LINE - means a line or rope secured at one end to a worker's safety belt, chest or body harness, or wristlets with the other end secured to an anchor point or lifting device located outside the entry portal. The anchor point shall not be a motor vehicle. Retrieval lines shall be of sufficient strength to remove an entrant when necessary.

SCBA - Self Contained Breathing Apparatus

ZERO MECHANICAL STATE - means that the mechanical potential energy of all portions of the machine or equipment is at its lowest practical value, set so that the opening of the pipe(s), tube(s), hose(s), or actuation of any valve, lever or button will not produce a movement which could cause injury.

CONFINED SPACE IDENTIFICATION AND CLASSIFICATION

1. Entry Supervisors are responsible for:

    a. Identifying and classifying all confined spaces into which staff, contractors or sub-contractors will enter. **Entry is considered to have taken place as soon as any part of the entrant's body breaks the plane of an opening into the space**.

    b. Identifying and providing written information as to the contents of the space, atmospheric conditions and rescue procedures. This information is to be forwarded to the Safety Manager.

2. A permit required confined space is:

    a. A confined space that meets the stated definition.

    b. Contains or could contain a hazardous atmosphere.

    c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.

    d. Contains any other recognized serious safety or health hazard.

3. If a space is not considered "permit required" but meets the criteria in this procedure, it must be considered permit required for entry.

RECLASSIFICATION

1. Although ALL confined spaces are initially considered "permit required confined spaces", certain spaces can be reclassified as "a non-permit confined space" provided the following apply:
   a. Site specific approval of a qualified professional. (i.e.: Environmental Safety Officer, Entry Supervisor, etc.)
   b. All contaminants, vessels containing contaminants, and contaminated material have been removed.
   c. All actual or potential atmospheric hazards have been eliminated and verified by testing.
   d. Ventilation is not required to maintain control of atmospheric hazards.
   e. All recognized hazards have been eliminated.
2. The Entry Supervisor shall document in writing on a separate sheet, the basis for reclassifying a permit required confined space to a non-permit required confined space, sign and date the statement, ref. the Entry Permit Number, and attach the sheet to the Entry Permit.
3. The space shall be reevaluated whenever the use or configuration of the space changes in any way that might increase the hazard to entrants. If necessary, the space shall be reclassified to permit required confined space.
4. All entrants shall exit the space immediately when hazards are noted.
5. The Entry Permit and all attachments shall be posted at the portal to the confined space.

REVIEW

This procedure will be reviewed:

1. Whenever any deficiencies are found, this procedure shall be revised to correct those deficiencies before any subsequent entries are authorized.
2. This procedure shall be reviewed and revised as necessary at least every 12 months using the canceled/completed permits from entries performed during that period.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

CONFINED SPACE PROCEDURE

1. Entering permit spaces is potentially one of the most dangerous jobs in industry. Entry into a confined space shall be conducted only if necessary to do assigned work. Whenever possible the assigned work shall be done from outside the space.
2. This Confined Space Entry Procedure shall be followed for entry into any defined confined space.
3. This procedure is to be used only by trained entry supervisors, entrants and attendants.
4. Hazards of entering confined spaces can be managed safely if the following principles and procedures are followed:
5. Identify the confined space and develop a written work plan for isolating, clearing and entering the space.
6. Isolate the space from all hazardous energy sources, production streams and/or energized equipment and stored pressure.
7. Empty, flush, purge, ventilate and clear the confined space (from the outside if possible).
8. Identify known and potential hazards or contaminants that may be found in the space.
9. Prohibit entry into the space until atmospheric testing is conducted and the applicable entry permit is completed, signed and posted at the portal to the space.
10. After the space has been removed from service and prior to entry, initial testing of the atmosphere shall be conducted.
11. When removing the space from service, the space shall be opened up as much as possible to allow for good ventilation.
12. After the applicable entry procedures have been conducted, an entrant, attendant or other trained person shall inspect the space to verify that all actions and conditions necessary for safe entry have been performed.
13. Any deficient areas shall be corrected before entry proceeds.
14. Once the inspection is completed, the entry supervisor who performed the inspection shall sign the entry permit.
15. Entry is prohibited until the permit has been completed satisfactorily and signed.
16. Ventilate the space to remove hazardous gases, vapors, dust and fumes and test the atmosphere with the ventilation system turned off.
17. Prepare the space, specifying the hazards that may be found, acceptable entry conditions, and required level of PPE to be used.
18. Prepare the Hot Work Permit as applicable if hot work is to be conducted in a confined space.
19. Review the work plans, hazards, safety requirements and PPE requirements with all entry personnel during the pre-entry meeting and with others working near the space (PSD60 and contractor) before entering the space.

GENERAL REQUIREMENTS

1. Each confined space being entered shall have a minimum of one dedicated attendant and one other support person (who may have other duties) within sight or call.
2. All Entry Supervisors must be thoroughly familiar with the confined space entry procedures and shall be responsible for ensuring that all entries are conducted according to this procedure.
3. The use of the space, internal configuration, size of the openings, contents, constructions materials, internal mechanical devices, unique characteristics and hazards are all factors that should be known by all entrants before entering.
4. No confined space entry is permitted without a properly executed Confined Space Entry Permit.
5. No confined space will be entered until it has been thoroughly tested for hazardous conditions and all of those conditions have been properly eliminated or overcome.
6. Unauthorized entry shall be prevented through measures such as training, posting of signs and barriers.
7. All required PPE must be sanitary and in proper working condition prior to use.
8. All members of the entry team must be properly trained, including the entry supervisor, entrants, attendants and rescue personnel.
9. Contingencies/Emergencies specific to each entry must be anticipated and planned for such as:
    a. Worker asphyxiation or injury
    b. Fire and explosion
    c. Fluid or gas leaks
10. All support equipment such as breathing apparatus, fire extinguishers, rescue ropes and harnesses, atmospheric monitors and required electrical devices (Ground Fault Circuit Interrupters [GFCI], explosion proof or intrinsically safe equipment, etc.) shall be utilized during entry and readily available as needed.
11. Rescue procedures and related equipment must be anticipated beforehand and be readily available during entry.

Note: Any deviation from this procedure must be approved in writing and attached to the Entry Permit by the Supervisor responsible for Confined Space Entry.

1. Before persons are permitted to enter a confined space, the following isolation procedures shall be conducted where applicable:
    a. Depressurize the confined space if necessary.
    b. The confined space must be isolated by Lockout/Tagout to preclude the entry of hazardous materials. Prevent the introduction into the confined space of hazardous materials from interconnecting equipment such as piping, ducts, vents, drains or other means. This will include not only inlet and outlet piping but all potential sources (electrical, thermal, hydraulic, mechanical, pneumatic, etc.).
    c. Lockout/Tagout any hazardous energy sources within or attached to the confined space to prevent accidental movement or energizing of such

sources. Where applicable, one or more of the following methods shall be used:

d. Remove a valve, spool piece, or expansion joint in piping to, and as close as possible to, the confined space, and blank or blind a pipe or duct at the nearest accessible point to the confined space.

e. Employ the "double block and bleed" technique (a method used to isolate a confined space from line, duct or pipe by locking closed and tagging in-line valves on a piping system and opening a valve between them that is vented to the atmosphere) at the nearest accessible point to the space.

f. In cases where lines have contained hazardous liquids or gases, inert gases, or gases or liquids at high temperature or pressure, all lines entering the space (process, steam, pneumatic or hydraulic lines, vents, drains, etc.) shall be physically disconnected as close to the tank or vessel as possible and practical.

g. Lines shall also be physically disconnected if they could introduce non-hazardous substances into the space in quantities that could engulf the entrants. If possible, the open ends of disconnected lines must be blanked or capped to prevent any liquids or gases from entering the space. All blind flanges must be of sufficient thickness and tensile strength to withstand maximum pressures and corrosion by chemicals to which they may be exposed.

h. Pressure in the lines must be bled down to atmospheric levels. Where lines cannot be physically disconnected due to space limitations, they may be blinded and tagged or a double block and bleed arrangement may be used.

i. To avoid the buildup of static electricity, all lines and other equipment used during the entry shall be electrically bonded and grounded to the space.

j. All sources of ignition within the space, and those nearby which are close enough to pose a hazardous, shall be turned off and locked out.

VENTILATION

Continuous ventilation of the space shall be performed under the following cases:

a. Initial air monitoring was not acceptable.

b. Natural ventilation is not adequate (example, space has only one entrance).

c. Chemicals are to be introduced into the space for cleaning or other purposes.

d. Welding or other “hot work” is to be conducted inside the space.

e. Only intrinsically safe air movers shall be used to ventilate confined spaces. Such air movers must be electrically bonded and grounded to prevent any buildup of static charge during operation.

f. Oxygen or power air-driven ventilators shall not be used to ventilate space.

g. Air movers used for ventilation shall be operated in the supply mode. The ventilation rate shall be high enough to achieve 20 air changes per hour.

h. Blowers shall be placed within 5 feet of the entry to the space to prevent re-entry of contaminated air.

i. Whenever possible, air movers shall be used with ducting to increase the efficiency of ventilation in the space and to prevent re-entry of contaminated air. For maximum efficiency, the end of the ducting must be placed within 2 feet of the bottom of the space.

j. If the ventilation stops, all entrants shall evacuate the space immediately.

k. The space must be thoroughly ventilated using atmospheric air only (never compressed air or oxygen). The equipment providing the ventilation outside the confined space must be situated to ensure that it does not introduce exhaust fumes or other toxic gases into the space.

l. Continuous ventilation shall be used while welding in a confined space or working in tank/vessel(s) that contain sludge, scale or other flammable materials.

POTENTIAL HAZARDS OF CONFINED SPACE ENTRY

1. Asphyxiation may occur because:
   a. Certain chemicals can absorb or replace oxygen in the space (inert gases).
   b. Welding processes can deplete oxygen in the confined space and elevate the carbon monoxide levels.
   c. Metal oxidation (rusting) inside a closed vessel may deplete oxygen from the atmosphere.
   d. Improper or inadequate ventilation can allow toxic or asphyxiation gases to accumulate within the space.
2. Gases or dust present a fire and/or explosion hazard and:
   a. May come from residues in the confined space.
   b. May enter from upstream or downstream components.
   c. May be introduced by compressed welding gases (acetylene, oxygen, etc.).
   d. May be introduced by liquid or gaseous releases from outside the confined space.
   e. Toxic substances or atmospheres:
   f. May be introduced from inside or outside the space.
   g. May cause damage through inhalation, ingestion or direct skin contact.
   h. Exposure effects may vary from mild to fatal.
   i. May be generated from procedures or materials used during the entry.
3. Electric shock can occur if electrical energy to the space is not properly disconnected and locked out or tagged out, or if equipment used in the space is improperly grounded or insulated.
4. Physical injuries can occur because of:
   a. Slippery conditions within the space.
   b. Falling objects.
   c. Contact with hot metal or corrosive chemicals.
   d. Failure to disconnect and lock out all energy supplies to moving equipment inside the confined space.
   e. Poor lighting.
   f. Cave-in when working in a trench or excavation.
   g. Note existing or potential hazards such as:
   h. Oxygen deficiency or enrichment

i. Flammability

j. Toxicity

k. Mechanical hazards

l. Heat hazards

CONFINED SPACE ATMOSPHERIC MONITORING PROCEDURES

1. A written record of the pre-entry atmospheric monitoring results shall be documented and kept at the work site for the duration of the entry. This record is part of the entry permit and is to be kept on file for 1 year.
2. The entry supervisor shall certify in writing, based upon the results of the pre-entry atmospheric monitoring, that all hazards have been eliminated.
3. All affected persons must be able to review the test results.
4. The most hazardous conditions will govern when work is being performed in two adjoining, connecting spaces.
5. After the space has been removed from service and prior to entry, a trained entrant or attendant shall conduct initial testing of the atmosphere inside the space. The testing shall be performed in the following sequence:
   a. Oxygen,
   b. Flammable atmosphere (%LFL), and
   c. Toxic gases or vapors. Record the readings on the entry permit.
6. Atmospheric testing shall be conducted using only properly calibrated air monitoring equipment. Properly calibrated equipment is equipment that has been calibrated using the manufacturer's recommended specifications within the past 30 days. The most recent calibration date shall be marked on the equipment and in the logbook for testing and maintenance of such equipment.
7. After appropriate ventilation, a check of the atmosphere inside the confined space shall be conducted prior to entry, as determined by the potential hazard and immediately prior to any hot work. If IDLH conditions are suspected, an air supplied respirator must be used while conducting initial testing. Record the readings.
8. Ventilating equipment shall be turned off at least fifteen minutes prior to performing any atmospheric monitoring to ensure that the values shown are representative of the raw atmosphere within the space.
9. Tests shall be conducted with a properly calibrated detector(s) in the following order:
   a. Oxygen
   b. Flammable vapors (%LEL)
   c. Suspected airborne contaminants
10. The person conducting the atmospheric monitoring shall initial and list on the permit the date/time the testing was conducted and the results of the test.
11. Atmospheric monitoring shall be conducted at a minimum of 3 locations within the space (i.e., bottom, middle, and top of space) for a minimum of 1 minute in each location. Record the readings on the entry permit.

12. If entry is to be through a manhole, initial air monitoring shall be conducted through the manhole cover without removing the cover whenever possible. This is to prevent sparking in case of a flammable atmosphere in the space.
13. If entry is to be through the side of a space, testing immediately inside the space shall be conducted prior to entry. After entry, atmospheric monitoring of the space 5 feet in front of the entrant shall be conducted using a 3-foot probe.
14. All atmospheric monitoring results shall be legibly recorded on the entry permit documenting the range of results obtained from the different sampling locations within the space.
15. Entry into a confined space is prohibited when one or more of the following conditions are present:
    a. Atmospheric oxygen concentration below 19.5 or above 23.0 percent.
    b. Flammable atmosphere in excess of 10 percent of its LEL.
    c. Airborne combustible dust at a concentration that obscures vision at a distance of 5 feet or less, or combustible dust concentration is more than LEL.
    d. Any air contaminant at a concentration in excess of its allowable concentration.
16. If the oxygen concentration is not within the range of 19.5 to 23.0 percent, the reason for the abnormal reading shall be investigated. Such a reading may indicate the presence of another toxin, such as carbon monoxide that displaces oxygen. This toxin shall also be monitored.
17. If any or more of the above conditions exist, the space shall be ventilated for a minimum of 10 minutes prior to re-testing.
18. With the ventilation still on, retest the space.
19. If conditions are still not acceptable, contact a qualified professional.
20. All atmospheric monitoring shall be performed by a trained qualified person, such as an entry supervisor, Health & Safety professional, etc., and all readings are to be recorded on the Confined Space Entry Permit.
21. Continuous atmospheric monitoring may be needed based upon the potential for changing atmospheric conditions. Readings are to be recorded every fifteen minutes.

CONFINED SPACE ENTRY PERMIT

1. The entry permit serves several essential functions:
    a. It restricts entry so that only authorized personnel may enter a confined space.
    b. It ensures that communication takes place and hazards are controlled.
    c. It minimizes safety precautions to be taken.
    d. Serves as an official written record of existing conditions, requirements and safeguards.
    e. Serves as a tool for reviewing this procedure.
2. Entry into a confined space shall be documented in writing using an ENTRY PERMIT.

3. The permit is a written authorization and approval that specify the job to be done and certify that all hazards have been evaluated and protected against.
4. It also serves as a record of all entrants.
5. All required signatures must be present and the permit must be filled out completely.
6. Entry permits are only valid for a specified time period (e.g., one task or one shift).
7. Prior to entry, a copy of the entry permit shall be made available to all entrants by posting it at the portal. All entrants shall examine it to determine if entry conditions have been met.
8. The original permit and any subsequent permits shall be retained for a minimum of one year.
9. All permit required confined space entries shall have the following minimum equipment at the entry site prior to initiating the entry:
    a. Communication equipment
    b. Full body harness
    c. Appropriate PPE
    d. For top entry: rescue line & tripod retrieval winch
    e. For bottom entry: rescue line, wristlets.
10. A separate Hot Work Permit shall be obtained for any welding, burning, drilling or other hot work that will take place within the space and attached to the entry permit.
11. The Entry Permit shall outline the elements of a rescue plan for the rescue of entrants in case of an emergency. It will outline at least the following elements:
    a. Designated rescuers
    b. Equipment
    c. Methods of summoning the rescue team.
12. Prior to any confined space entry, a pre-entry safety meeting shall be held that involves all participants (including contractors) and covers at least the following points:
    a. Review all existing or potential hazards that may exist in the space.
    b. Review the required levels of PPE. The entry supervisor shall ensure that each participant has the proper PPE and knows how to use it.
    c. Discuss the work to be performed, who will do it and how it will be done safely.
    d. Review the rescue plan that will be activated in case of emergency.
13. Anyone not attending the pre-entry safety meeting will not be allowed to enter the permit space until they have been briefed on all the information presented at that meeting.
14. Preparation of the Entry Permit
15. Entry into a permit-required confined space shall not be made unless an entry supervisor has assured that the following procedures have first been completed:

a. An entry permit is initiated by signing the Confined Space Entry Log, obtain a blank Entry Permit and fill it out. The permit will indicate:

   i. The specific confined space to be entered.

   ii. What work is to be performed.

   iii. The length of time estimated to complete the work. Permits are only valid for 12 hours. A permit may be extended for another 12 hours provided that acceptable conditions are re-certified and test results entered on the permit.

   iv. What date and time the work will be started.

   v. What personnel, names and titles, will perform the work.

   vi. Name and title of authorizing authority.

   vii. Name and title of Entry Supervisor.

   viii. Name and title of person acting as the "Attendant".

16. All pumps or lines which may convey flammable, injurious, or incapacitating substances into the confined space shall be disconnected, blinded, (double blocked or bled), or effectively isolated by other means to prevent the development of dangerous levels of air contamination or oxygen deficiency within the space. The closing of valves alone, or the closing of valves and locking or tagging of them, is not considered effective protection. The disconnection or blind shall be so located or done in such a manner that inadvertent reconnection of the line or removal of the blind is effectively prevented.

NOTE: This does not require the blocking of all laterals to sewers or storm drains unless experience or knowledge of industrial use indicates materials resulting in dangerous air contamination may be dumped into an occupied sewer.

17. The atmospheric testing equipment must be "field checked" prior to testing the atmosphere in the confined space.

18. Atmospheric testing must be conducted for oxygen levels between 19.5% and 23.0% by volume and the percentage found is to be entered on the permit. The last calibration date of the oxygen detector must be entered on the permit.

19. Atmospheric testing must be conducted for flammable gas, vapors or mists in excess of 10% of its LEL and results noted on the permit. The last calibration date of the combustible gas indicator must be entered on the permit.

20. The confined space must be flushed or emptied of all dangerous substances and then tested for known toxic substances for the Permissible Exposure Limit (PEL).

21. Enter the value of the PEL on the permit.

22. If a hazardous atmosphere is present ventilation and respirators must be provided.

23. Electrical and mechanical hazards must be removed or prevented from causing a hazardous situation.

24. Staff entering a permit-required confined space with a hazardous atmosphere must be provided with an appropriate retrieval device, retrieval line and an appropriate respirator. The staff must have received and have documented training on the use of a respirator.

25. If a hazardous atmosphere is present atmosphere testing shall be conducted every hour that the confined space is occupied and results noted on the permit.

26. If there is a problem, necessary action shall be taken to ensure the safety of those involved. The attendant is to contact the applicable rescue team and inform them of the conditions when they arrive on the scene. The Life Safety officer must be notified immediately of all problems.

NOTE: Under NO circumstances is the attendant to enter the confined space.

27. When the work has been completed the Entry Supervisor shall sign the permit as being completed and all conditions in the confined space have been returned to normal, the space is closed and properly marked.

CONFINED SPACE ILLUMINATION

1. All confined spaces shall be properly illuminated.
2. When temporary lighting is used in confined spaces containing combustible or flammable dust, residues or contaminates, the following requirements shall be met:
    a. All temporary lighting and powered equipment shall be protected by the use of a Ground Fault Circuit Interrupter (GFCI) or be the low voltage type (12 volts).
    b. All lighting shall be Factory Mutual () or Underwriters Laboratories (UL) approved. Equipment used in hazardous areas shall match the classification of the area (i.e., Class 1 or 2, Division 1 or 2, etc.).
    c. Extension cords used for temporary lighting shall be equipped with connectors or switches approved for hazardous locations.

PROTECTIVE EQUIPMENT

1. Appropriate protective equipment (selection based on exposure) shall be worn during entry. This may include but is not limited to the following:
    a. Protective clothing
    b. Hard hat
    c. Gloves
    d. Safety-toed footwear
    e. Safety glasses with side shields, or face shields
    f. Respiratory protection

Note: No one will use respiratory protection unless they have been properly trained and qualified in its use according to 1910.134.

2. A rescue line shall be worn by all entrants unless it would increase the overall risk of entry.
3. The rescue line shall be attached to a mechanical device or fixed point outside the space. Under NO circumstances is the line to be fastened to a vehicle.
4. A mechanical device must be available to retrieve personnel from vertical type spaces more than 4’ deep.
5. A full body harness shall be worn for all top entry confined spaces.
6. Personal Protective Equipment (PPE) is necessary for entry into a confined space if the space contains a corrosive hazard or if chemicals brought into the space require such clothing.

7. The proper type of PPE must be assigned for use in confined spaces based on the types and amounts of hazardous substances present in the confined space.
8. The Entry Supervisor is to contact the Supervisor if there is any question about what is proper PPE for a particular entry.
9. Additional information may be obtained from the applicable SDS.
10. Where required, PPE shall be used in accordance with 1910.134, and shall be NIOSH approved.
11. Respiratory protection is required in situations where hazardous dust is present and when atmospheric monitoring results dictate.
12. The Environmental Safety Officer shall determine the proper type of respiratory equipment required.
13. Employees Must be trained in the proper selection and use of PPE.
14. Retrieval equipment is required for all permit required confined spaces such as entries that:
    a. Present a hazard from the presence of a material inside the space during entry.
    b. Involve hot work or the presence of chemicals inside the space.
    c. Require the use of air supplying respirators.
    15. Retrieval equipment shall include:
    a. A retrieval line that shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve staff from vertical type permit spaces more than 5' feet deep.
    b. A chest or full body harness, with a retrieval line attached at the center of the entrants back near shoulder level, or above the entrants' head. Wristlets may be used in place of the chest or full body harness if the Entry Supervisor can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
    c. Fall protection for spaces greater than 10 feet in depth and requiring entry through the top.
    d. As a minimum, safety glasses and safety shoes or boots shall be worn while in a confined space.

MISCELLANEOUS TOOLS AND EQUIPMENT

1. Many types of tools and equipment may be utilized to conduct a confined space entry. The tools and equipment shall meet the following minimum criteria:
    a. Electrical tools using nominal 120 volt alternating current shall be grounded and connected only to a GFCI circuit. (Low voltage systems (12 volts) are preferred.)
    b. Within spaces where a flammable atmosphere may exist, all electrical equipment shall be explosion proof or intrinsically safe.
    c. All electrical lighting systems shall be connected to a GFCI circuit or provided by a 12-volt electrical system.

d. Where ladder or scaffolding use is required, all equipment shall be non-slip/skid and shall be secured (tied off) as necessary to ensure against falling.

e. Arc welding equipment shall be properly grounded, taken into space only when needed and removed as soon as possible. A Hot Work Permit is required.

f. Compressed gas cylinders (except breathing air and portable fire extinguishers) ARE NOT to be taken into any confined space. Oxyacetylene hoses and arc welding equipment may be taken into the space but must be checked for leaks and/or cracks prior to use. If leaks or cracks are found the hose or cable shall be replaced immediately.

MEDICAL CONSIDERATIONS

1. Individuals who are claustrophobic should be made aware of the conditions involved in a confined space and should notify their supervisor if they feel unable to function in such an environment. The Supervisor should excuse such individuals.
2. Other Precautions:
   a. The number of confined space entrants should always be kept to a minimum, especially during “hot work” (welding or burning).
   b. Entry will not be permitted until entrants have a minimum visual distance of 5 feet within the confined space.

ADDITIONAL PROCEDURES

Rescue Service Personnel

1. Rescue teams shall be from the local Fire Department and/or Rescue Squad as well as in-house personnel trained to effect rescues.
2. All rescuers entering the space shall be trained and equipped to perform rescues. They shall also be trained as entrants.
3. A rescue entry is to be considered as IDHL until proven otherwise.
4. Rescuers shall use a separate air supply from those being rescued.
5. Rescue teams shall:
   a. Be provided with, and trained to use properly, all necessary equipment to make rescue from a confined space.
   b. Practice making confined space rescues at least once every twelve months, extracting dummies, mannequins or personnel from confined space that closely approximate those for whom rescue may be required.
   c. Have each member of the rescue service trained in basic first aid and CPR. At least one of the rescuers holding current certification in CPR and basic first aid shall be available.

Emergency Preparation and Procedures

1. Appropriate fire protection and/or water supply should be readily available and operable if needed.
2. For emergencies:
   a. At least one reserve airline cart and two air lines must be readily available.
   b. A rescue harness and line(s) must be available.

3. If necessary, a SCBA may be used in lieu of an airline respirator when used in conjunction with a five-minute escape bottle.
4. Attendants will not enter a confined space to make a rescue unless ALL the following conditions are met:
    a. They are relieved by another attendant.
    b. They are also trained as entrants.
    c. They are equipped with the proper PPE clothing and equipment.

Training

1. Managers and Supervisors shall inform their staff of the hazards of working in confined spaces and permit-required confined spaces by providing specific training to staff before they may be authorized to enter a confined space.
2. New staff shall receive an introduction to confined space entry procedures from the Environmental Safety Officer. It will include a briefing on and a copy of, the confined space entry procedure. Supervisors must ensure that untrained staff DO NOT participate in confined space entries.
3. All entry supervisors, entrants and attendants shall attend an annual training course to keep aware of changing requirements and to maintain skills. Supervisors shall document through the Administrative Assistant that the required training has been received and that the staff is proficient in the duties required of him/her. Documentation shall contain each trained staff's name, the signature of the trainer and the date of training.
4. Training shall include but is not limited to the following:
    a. All entry supervisors, entrants and attendants of a confined space shall have completed training on the related Facilities Policies and Procedures that meet applicable OSHA regulations, including (Confined Space), (Respiratory Protection), (Hazard Communication) and (Hazardous Energy Control [Lockout/Tagout]).
    b. Use of atmospheric testing devices, for those staff required to perform atmospheric tests, including field checks as specified by the manufacturer, normal use and specific limitations of the equipment.
    c. Use of special equipment and tools, including rescue equipment.
    d. Emergency and rescue methods and procedures.
    e. Duties of the "entry supervisor" during permit-required confined space operations.
    f. Duties of the "attendant" during permit required confined spaces.
    g. Duties of the "entrant" during permit required confined spaces.
    h. The entry permit system.
    i. A "hands on" practice session.
5. Training shall be given to affected staff at the following times:
    a. Before the staff is first assigned duties relating to confined space.
    b. Before there is a change in his/her assigned duties related to confined space.
    c. Whenever there is a change in permit space operations that presents a hazard about which the staff has not been trained.

   d. Whenever the supervisor has reason to believe that the staff's knowledge or use of procedures are inadequate or there have been deviations from those procedures.

6. A written test will be required to be completed by all trainees. The test shall be written by the trainer and is to be sufficient in nature to determine that the trainee has learned the necessary safety requirements of a confined space entry.
7. Failure to pass the written test with a score of at least 70% correct shall result in re-training.
8. Rescue Teams shall be trained to use the equipment they may need to perform rescue functions.
9. Rescue teams, including those from emergency community service organizations, shall practice annually removing victims from representative confined spaces of the same configurations and accessibility from which an actual rescue could be required.
10. The attendant and/or at least one member of each rescue team shall hold a current certification in basic first aid and CPR (Cardio-Pulmonary Resuscitation).
11. Training for emergency community service organizations shall be coordinated through the Environmental Safety Officer.
12. Training records shall be kept on file by the Administrative Assistant and shall include the following information:
    a. Date of the training program.
    b. The instructor(s) name and title.
    c. Names of staff and titles.
    d. Outline of topics covered.
    e. Copies of tests and test scores.

CONTRACTORS AND SUB-CONTRACTORS

1. The term "contractor" shall also imply "sub-contractor".
2. Contractors shall be informed by the Project Coordinator of the hazards of the confined space prior to the beginning of work. The Project Coordinator shall provide the contractor with copies of the Facilities hazard evaluation of the confined space(s) involved, Confined space Entry procedure, SDS's for any chemicals in the area of the job and the Lockout/Tagout Procedure. The Project Coordinator shall also audit the contractor to verify proper work practices.
3. (Reference CFR 1910.146 (C)(8): When an employer (host employer) arranges to have employees of another employer (contractor) perform work that involves permit space entry, the host employer shall:(i) Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with an permit space program meeting the requirements of this section; (ii) Appraise the contractor of the elements, including the hazards identified and the host employer's experience with the space, that make the space in question a permit space; (iii) Apprise the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.(iv) Coordinate entry operations with the contractor, when both host employer personnel and contractor personnel will be working in or near permit spaces, as required by paragraph (d)(11) of this section; and(v) Debrief the contractor at the conclusion of the entry operations regarding the permit space

program followed and regarding any hazards confronted or created in permit spaces during entry operations.

4. Contractors who will enter confined spaces must be pre-qualified to perform such work by providing the following documentation to the Facilities Project Coordinator:
    a. Their general safety policies and procedures.
    b. Their Confined Space Entry Procedure (It must meet the requirements of OSHA 1910.146.)
    c. Their Entry Permit Program and Permit
    d. Training certification for all involved personnel. At least one contractor employee on the job site must be certified as an Entry Supervisor.
    e. Their Hot Work procedures and permit if the job involves hot work.
    f. Names of past customers where they have done work involving confined spaces.
    g. List of confined space safety equipment they will provide for use on the job.
    h. Emergency procedures they will use on the job.
    i. A statement indicating that they have never been cited by state or federal safety compliance agencies for any confined space safety infraction. If they have been cited previously, a copy of the citation and a statement from them describing the corrective action they have instituted shall be provided.
5. (Reference 1910.146: In addition to complying with the permit space requirements that apply to all employers, each contractor who is retained to perform permit space entry operations shall: Obtain any available information regarding permit space hazards and entry operations from the host employer; Coordinate entry operations with the host employer, when both host employer personnel and contractor personnel will be working in or near permit spaces, as required by paragraph (d)(11) of this section; and Inform the host employer of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.
6. Contractor personnel shall conduct atmospheric monitoring using their own calibrated equipment and must issue an entry permit using their own form. Documentation of proper calibration shall be available at the work site.
7. Contractors shall be responsible for the assignment of appropriate PPE for their personnel. The PSD60 PPE will not be used by the contractor.
8. Contractors shall have their own appropriate rescue equipment, rescue team and procedures available at the work site.
9. Upon completion of the contractor's confined space work, a copy of the contractor's Entry Permit shall be forwarded to the Facilities office to be filed and retained for annual review.
10. The Contractor shall provide a signed statement indicating that they assume primary responsibility for compliance with local, state, and federal regulations concerning employee safety and health and environmental issues.
11. The Contractor shall provide a signed statement to the Project Coordinator that they have received and understand the items mentioned above that must be provided to the contractor.

12. If the project will involve joint operations with Facilities personnel these operations must be coordinated by the Project Coordinator.
13. The Project Coordinator will meet with the Contractor to review safety issues that were involved on the job after completion of work by the Contractor.

PURPOSE

The purpose of this Procedure is to establish guidelines for the location and identification of underground utilities prior to any ground breaking operations by contractors or PSD60 employees. Reference: 29 CFR: 1926.650, 1926.651, 1926.652, 1926 Subpart P Appendices A, B, C, D, E, and F.

DEFINITIONS

ACCEPTED ENGINEERING PRACTICES - means those requirements which are compatible with standards of practice required by a registered professional engineer.

CAVE-IN - means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

COMPETENT PERSON - means someone who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to staff and who has the authority to take prompt corrective measures to eliminate them.

EXCAVATION - means digging, boring, post driving, or any other operation that penetrates below the surface of the ground. This includes the removal of trees, bushes, sidewalks, etc. that could damage buried utilities.

PROTECTIVE SYSTEM - means a method of protecting staff form cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

TRENCHING - means a specific form of excavation. A trench is a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

RESPONSIBILITIES

1. The Executive Director is responsible for the overall implementation of this procedure.
2. Supervisors/Managers are responsible for ensuring that all utility systems are properly maintained and that all Facilities staff are aware of the details of this procedure.
3. The Competent Person is responsible for designing support systems and for choosing the best option for sloping or benching the faces of an excavation when required.

4. The Project Coordinator shall:
    a. Ensure that all PSD60 utility drawings are maintained accurately and are up-to-date and appoint an individual to serve as Competent Person for trenching activities.
    b. Ensure that all affected utilities are physically located and marked on site in order to ensure (to the maximum extent possible) that utilities systems are not damaged during the course of the project and instruct contractors to contact Blue Stake as required by state law.
5. The Project Coordinator, Supervisor, or Grounds Maintenance staff is responsible for any project that involves excavation shall coordinate the notification of all affected PSD60 departments and initiate the process. If a utility is damaged, the Project Coordinator is to take immediate action to ensure safety and correction of the damage.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

EXCAVATION & TRENCHING PROCEDURE

1. The Project Coordinator shall ensure that the following paragraph is included in the bid documents for all contract work requiring excavation:

   EXCAVATION - no digging, boring, or post driving is allowed on PSD60 property without prior written approval of the Facilities Department. Approval requires that the Contractor (or Subcontractor) obtain any required excavation permit PRIOR to excavation. Any holes left after excavation (i.e., test boring holes) shall be completely filled and compacted to prevent settlement. Failure to comply with these requirements will result in work shutdown, repair of damages by the contractor, and may result in a fine, contract termination, and/or default. Call the Facilities Department for details at (719) 549-7201.

2. The Project Coordinator shall be notified at least five (5) days in advance of the start of excavation by a contractor that will be performing the work. If there is no assigned Project Coordinator (i.e., grounds maintenance work), then the person requiring the work shall notify the Project Coordinator at least three (3) days in advance.

3. The Project Coordinator will make a copy of a portion of the Site Map showing, in detail, the area to be excavated. All known utilities and the proposed area of excavation will be shown on this map.

4. All Utilities in close proximity to work shall be identified with the appropriate color paint at the site by the engineering Project Coordinator. Color coding is as follows: Red - electric, Yellow - gas, oil and steam, Orange - communications, Blue - water, Green - sewer and storm drains.

5. Involvement of Facilities staff and the Contractor during an excavation project is governed by this procedure. The Project Coordinator and contractor shall ensure that all open holes during the excavation are properly protected by barricades. Any open holes after excavation (i.e., test boring holes) shall be properly filled with rock dust and compacted to prevent later settlement.

6. The Project Coordinator shall note any utility changes or additions discovered during the excavation process. Such changes are to be incorporated on the site utility map(s). These updates shall include the date of change.

7. Excavations (Trenching is a form of excavation.) have the following specific requirements:

   a. A stairway, ladder, or ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for staff.

   b. Staff exposed to vehicular traffic shall be provided with and shall wear warning vests or other suitable garments marked with or made of reflectorized or high-visibility material. (See your supervisor for these items when they are needed.)

8. No staff shall be permitted underneath loads handled by lifting or digging equipment. Staff shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when vehicles are equipped, in accordance with 1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

9. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning

system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

10. In addition to the requirements of 29 CFR 1926.50-1926.170 subparts D and E, to prevent exposure to harmful levels of atmospheric contaminants and to ensure acceptable atmospheric conditions, the following requirements shall apply:

    a. Where oxygen deficiency (atmosphere containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before staff enters excavations greater than 4 feet in depth.

    b. Adequate precautions shall be taken to prevent staff exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with subparts D and E of 29 CFR 126.50 - 126.170.

    c. Adequate precaution shall be taken such as providing ventilation, to prevent staff exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.

    d. When controls are used that is intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

    e. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended while in use.

11. Staff shall not work in excavations where there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect staff against the hazards posed by water accumulation. The precautions necessary to protect staff adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

12. If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.

13. If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water form entering the excavation, and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with paragraphs above.

14. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of staff.

15. Excavation below the level of the base or footing of any foundation, or retaining wall that could be reasonably expected to pose a hazard to staff shall not be permitted except when: a support system such as underpinning is provided to ensure the safety of staff and the stability of the structure; or the excavation is in

stable rock; or a registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or a registered professional engineer has approved the determination that such excavation work will not pose a hazard to staff.

16. Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect staff from the possible collapse of such structures.
17. Adequate protection shall be provided to protect staff from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide adequate protection.
18. Staff shall be protected from excavated or other material or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such material or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.
19. Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when staff exposure can be reasonably anticipated.
20. Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed staff shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.
21. Walkways shall be provided where staff or equipment are required to cross over excavations. Guardrails which comply with 1926.502(b) shall be provided where walkways are 6 feet or more above lower levels.
22. Adequate barrier, physical protection, shall be provided at all excavations. All wells, pits, shafts, trenches, etc shall be barricaded or covered. Upon completion of exploration and other similar operations, temporary wells, pits, shafts, trenches, etc., shall be backfilled.
23. Each staff in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with 29 CFR 1926.652 Subpart P and Appendices A - Soil Classification, B - Sloping and Benching, C - Timber Shoring for Trenches, D - Aluminum Hydraulic Shoring for Trenches, E - Alternatives to Timber Shoring, and F - Selection of Protective Systems.

Training

1. All Staff who are or may be involved in excavations or trenching are to receive training. This will include all Staff regardless of what or how much experience the individual may have. As a minimum that training is to include all aspects of this procedure.

2. Training records are to be retained by the Administrative Assistant and should include: the name of staff, signature of the staff, date of training, and the name of the instructor and signature of the trainer.
3. This procedure shall be reviewed annually.

PURPOSE

This Procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. Lockout is the preferred method of isolating fixtures, equipment or machinery from energy sources. It shall be used to ensure that the fixture, equipment, or machinery is isolated from all potentially hazardous energy and locked out or tagged out before Staff perform any servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause bodily injury and/or to prevent damage to fixtures, equipment, machinery or the environment. (Ref. 29CFR 1910.147)

DEFINITIONS

AFFECTED STAFF - Any staff who works in an area where servicing or maintenance operations are performed. An affected staff does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing lockout/tagout procedures. However, an authorized staff and an affected staff may be the same person when the affected staff's duties also involve performing maintenance or service. An affected staff becomes an authorized staff whenever he or she performs servicing or maintenance functions.

AUTHORIZED STAFF - Any staff who performs servicing or maintenance on equipment and machinery. This staff implements lockout/tagout procedures to guarantee his or her own protection.

CAPABILITY OF BEING LOCKED OUT - an energy-isolating device is considered capable of being locked out if it meets one of the following requirements:

1. It is designed with a hasp to which a lock can attached.
2. It is designed with any other integral part through which a lock can be affixed.
3. It has a locking mechanism built into it.
4. It can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy control capability.

ENERGIZED - Equipment and machinery is energized when they are connected to an energy source or contain residual or stored energy.

ENERGY CONTROL PROCEDURE - A written document that contains the steps an authorized staff must follow to safely control hazardous energy during servicing or maintenance of equipment or machinery.

ENERGY CONTROL PROGRAM - A program intended to prevent the unexpected energizing or the release of stored energy in equipment or machinery. The program consists of:

1. Energy Control Procedures.
2. A staff training program.
3. Periodic inspections of the Staff using the procedures and a procedure review.

ENERGY ISOLATING DEVICE - A mechanical device that physically prevents the transmission or release of energy.

ENERGY SOURCE - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, steam, thermal or other energy.

LOCKOUT - Placing a lock on an energy-isolating device according to an established procedure, that ensures that the fixture, equipment or machinery cannot be energized until the lock is removed by the person who placed it there.

LOCKOUT DEVICE - A device that utilizes a positive means such as a lock to hold an energy-isolating device in a safe position and prevent the energizing of fixtures, equipment or machinery.

TAGOUT - The placement of a tagout device on an energy-isolating device, according to an established procedure, clearly marked by means of a tag that states who has the fixture, equipment, or machinery shut down and that the equipment or machinery must not be operated until the tagout device is removed by the staff that places it there.

TAGOUT DEVICE - Any prominent warning device, such as a tag and a means of attachment that can be securely fastened to an energy-isolating device according to established procedure. The tag indicates that the equipment or machinery to which it is attached must not be operated until the tagout device is removed according to the energy control procedure. The attachment method must be substantial and not easily removed.

ZERO ENERGY STATE - All sources of energy have been controlled and/or dissipated.

RESPONSIBILITIES

1. Executive Director: Overall responsibility for this procedure.
2. Managers and Supervisors:
   a. Responsible to ensure that all staff are aware of this procedure and are trained in its use and application. All training is to be documented and copies sent to the Administrative Assistant. Ensure that contractors are aware of this procedure.
   b. Responsible to ensure that all maintenance personnel are aware of this procedure and are trained in its use and application. All training is to be documented and copies sent to the Administrative Assistant. Ensure that contractors are aware of this procedure.
   c. Responsible to ensure that all maintenance personnel are aware of this procedure and are trained in its use and application. Names and Job Titles of Staff who are authorized to lockout or tagout shall be documented and copies sent to the Administrative Assistant. Each new or transferred staff and other staff whose work operations are or may be in the area shall be trained in the purpose and use of this lockout or tagout procedure. Supervisors shall verify the accuracy of existing written Energy Control (shutdown/startup) Procedures, write them if they are non-existent, obtain adequate supplies, maintain the inventory and document the issuance of locks, tags, and locking devices.
   d. Responsible for auditing this procedure, that procedures are consistent throughout Facilities and that documentation is accurate.
3. Environmental Safety Officer: Responsible to check for the existence or non-existence of written Energy Control (shutdown/startup) Procedures in mechanical equipment rooms and to so indicate on their inspection report. A copy of the inspection report is to be sent to the Executive Director.

NOTE: Whenever renovation, major replacement, repair, or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.

4. Maintenance Staff: Responsible to know and to understand the important safety significance of this procedure and its proper application. If violations of this procedure are observed notify your supervisor and the Environmental Safety Officer immediately.

HAZARD ANALYSIS

1. A written Hazard Analysis shall be performed by Scheduled Maintenance staff for each piece of equipment and machinery that is used, serviced or maintained. Be sure to include stored equipment and machinery. This begins with an inventory to be recorded.
2. As the inventory is completed for each building, a more detailed evaluation of each piece of equipment or machinery shall be completed. Document all energy sources (direct and hidden), the hazards posed, the magnitude or measurable degree of danger, any special or unusual conditions, and the proper isolation methods and devices. Record these items and send a copy of this form to the Environmental Safety Officer.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

LOCKOUT / TAGOUT PROCEDURE

1. Basic Rules for Using Lockout or Tagout System Procedures:

   a. ALL energy sources to fixtures, equipment and/or machinery shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel.

   NOTE: Isolating a piece of equipment from its source may not eliminate all potential hazards. Stored energy may be present within the equipment or machinery.

   b. Do not attempt to operate any switch, valve or other energy isolation device when it is locked or tagged out.

   c. Never remove a lock or tag for another staff. Only the staff placing the lock or tag may remove it. If there is a need to remove another staff's lock or tag in an emergency, ONLY the maintenance supervisor may do so AFTER MAKING EVERY EFFORT TO CONTACT THE OWNER OF THE LOCK OR TAG.

2. Sequence to lockout or tagout:

   a. The Supervisor shall make a survey to locate and identify all isolating devices to be certain which switch(s), valve(s) or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical or others) may be involved.

   b. Verify the written Energy Control (shutdown/startup) Procedure attached to the equipment or machinery, make necessary changes, supply the written procedure in the absence thereof, and send a copy of the procedure or changes to an existing procedure to the Environmental Safety Officer for review.

   c. The supervisor or leadman shall notify all affected staff and customers that a lockout or tagout system is going to be utilized and the reason therefore. The authorized staff shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.

   d. If the machine or equipment is operating, shut it down by the written Energy Control (shutdown) Procedure attached to the equipment or machine (depress stop button, open toggle switch, etc.).

   e. Operate the switch, valve or other energy isolating device(s) to ensure that the equipment is isolated from its energy source(s). Stored energy (such as that in spring, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam and water pressure, etc.) MUST be dissipated or restrained by methods such as repositioning, double blocking and bleeding down, etc.

   f. Lockout and/or tagout the energy isolating devices with assigned individual lock(s) or tag(s). Tags shall indicate that the energy-isolated device(s) shall not be operated until after the removal of the tag.

   g. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

   CAUTION: Return operating control(s) to "neutral" or "off" position after the test.

   h. The equipment is now locked out or tagged out.

3. Restoring Machines or Equipment to Normal Production Operations:
    a. After servicing and/or maintenance are completed and the fixture, equipment or machinery is ready for normal operation, check the area around the fixture, equipment or machinery to ensure that no one is exposed.
    b. After all tools have been removed from the fixture, equipment, or machinery, guards have been reinstalled and staff is in the clear, remove all lockout or tagout devices. Notify all affected persons that the Lockout or Tagout has been removed. Operate the energy isolating devices to restore energy to the fixture, equipment or machinery following the written Energy Control (startup) Procedure.
4. Procedure Involving More Than One Person
    a. In the preceding steps, if more than one individual is required to work on the equipment or machinery, each shall place his/her own personal lockout device and/or tagout device on the energy isolating device(s). When an energy-isolating device cannot accept multiple locks and tags, a multiple lockout or tagout device (box or hasp) may be used.
    b. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each staff will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his or her lockout protection, that person will remove his/her lock from the box or cabinet.
    c. When work must continue over a shift change the supervisor or lead worker must ensure that all staff is aware of which locks are to be replaced or left in place. All staff in the oncoming shift must be informed of the Lockout/Tagout conditions.
5. Additional Requirements:
    a. Managers and Supervisors should annually verify that all staff is in compliance with the requirements of this procedure.
    b. Initial training must be provided for all authorized and affected staff, repeated annually and documented. Additional retraining for all authorized and affected staff must be provided whenever there is a change in equipment, machinery, procedures or whenever there is evidence that this procedure is being violated.
    c. Locks provided by Facilities are the ONLY authorized locks to be used for equipment or machine lockout. Each lock should be keyed separately. One key issued to the authorized staff possessing the lock and the other key kept by the supervisor for emergency situations only.
    d. Each lock should be identified as to its owner. In lieu of identification on the lock, an authorized staff's personal tag can be applied in addition to his/her lock when locking out the equipment or machinery so that the lock's owner can be readily identified.
    e. The tags, padlocks and lockout devices used for locking out machinery and equipment should ONLY be used for lockout and not for any other activity.
    f. All equipment or machinery should be provided with appropriate energy isolating devices. Each such energy isolating device should be clearly identified by a label. ONLY where such devices are not now existent, may TAGOUT be used.

g. Whenever the equipment or machinery is modified or rebuilt, the energy control device must be altered to allow the incorporation of a lock for lockout purposes.

h. When new or replacement equipment or machinery is ordered the specifications shall include the capability of locking out the energy source(s).

NOTE: Whenever renovation, major replacement, repair, or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.

6. All equipment or machinery that is required to be locked or tagged out shall have a written Energy Control (shutdown/startup) Procedure attached to or near the main power switch for that equipment or machinery. This procedure is to identify all the energy sources which may be acting on this equipment and detail how each energy source is to be locked or tagged out. A copy of these procedures is to be sent to the Environmental Safety Officer for review.

7. The removal of a lock or tag by anyone other than the assigned staff who placed the lock or tag on the equipment or machinery is a very serious event (A violation of the Standards of Conduct Notice may be issued) and shall be documented with a copy of the documentation being sent to the Human Resources Department. The supervisor should make every effort to locate the responsible staff to be sure that he/she is not present on the Site, make a thorough examination of all machinery or equipment protected by the lockout or tagout to ensure that personnel, tools, and equipment are clear, and notify the supervisor before removing the lock or tag. Continue to make all reasonable efforts to contact the staff to inform him/her that his/her lockout or tagout device has been removed and to ensure that the staff has this knowledge before he/she resumes work at the Site.

8. A tagout device, including the means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment shall meet the following:

   a. Be able to be affixed by hand.

   b. Be non-reusable.

   c. Be self-locking.

   d. Requires a minimum unlocking strength of 50 pounds.

   Note: One device which meets all of these requirements is a one-piece, all environment-tolerant, nylon cable tie.

9. Cord and plug equipment is exempt from the provisions of this procedure provided that the following two conditions are met:

   a. Power to the equipment or machine must be completely removed by unplugging.

   b. The authorized staff must have the plug under his or her exclusive control (i.e., in sight at all times). If not, the plug must be locked out.

10. An audit shall be performed annually by the Environmental Safety Officer to ensure compliance with this written procedure.

11. Violations of this procedure shall be handled by means of the PSD60 Personnel Rules.

TRAINING

1. All personnel authorized to do maintenance and affected staff (those using or capable of starting a machine or any equipment) shall be trained annually on this procedure.
2. All new staff shall be properly trained on this procedure before working in an area where lockout or tagout is in use.
3. Supervisors must document that staff training has been accomplished. Copies of this documentation are to be sent to the Environmental Safety Officer.
4. Documentation must include the names of all staff participating, the date of the training, a copy of the curriculum, and the name of the trainer.
5. To ensure that the necessary information has been learned a written test shall be administered by the trainer and the results recorded. Staff who do not achieve at least a 75% score on the written test must be retrained.
6. Written test results are to be retained by the Administrative Assistant.
7. Training should include the following:
    a. Ensure that all staff know the details of this procedure and that they know what to do and what not to do when they encounter a lock or a tag on a switch or a device they wish to operate.
    b. Staff must be aware that a tag is not a physical restraint. They must be aware of the false sense of security that tagout systems can present.
8. Retraining should take place:
    a. When staff are re-assigned to a different area or machine.
    b. When there is a change in the tag and lockout procedure.
    c. When there is a change in equipment or machinery.
    d. When a periodic inspection or audit reveals inadequacies in the staff's knowledge or use of Energy Control Procedures or this Energy Control Program.

PSD60 FACILITIES DEPARTMENT	
Scaffold & Aerial Platform Safety	**2026**

PURPOSE

To ensure a safe workplace based on the following formal, written procedures for scaffold work. These procedures will be reviewed and updated as needed to comply with new OSHA regulations, new best practices in scaffolding and aerial platforms/lifts operations. This scaffold and aerial platform/lift safety plan applies to ALL scaffolds and aerial platforms/lifts where work is being performed at PSD60 facilities and properties. (Ref. 29 CFR 1010.28, 29 CFR 1926.450-454)

DEFINITIONS

COMPETENT PERSON - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

QUALIFIED PERSON - One who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

RESPONSIBILITIES

1. Executive Director - Responsible for the overall implementation of this procedure.
2. Managers/Supervisors:
    a. Ensure the necessary training is acquired by all staff working on scaffolds or aerial platforms.
    b. Responsible to appoint a PSD60 employee to serve as a Qualified Person and to receive the necessary training.
    c. Responsible to appoint a lead person(s) to serve as Competent Person(s) and to receive training for this position.
    d. Responsible to ensure that all scaffold and aerial platform work is performed by persons trained to perform such work.
3. Environmental Safety Officer - Responsible to ensure that all provisions of this procedure are kept updated according to the latest OSHA requirements and that training is available for staff.
4. Administrative Assistant - Responsible for scheduling necessary training and maintaining training records.
5. Competent Person - Responsible for the following:
    a. Not to intermix scaffold components manufactured by different manufacturers unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components manufactured by different manufacturers will not be modified in order to intermix them unless the Competent Person determines the resulting scaffold is structurally sound.
    b. Evaluating all direct connections and to confirm, based on that evaluation, that the supporting surfaces are capable of supporting the loads to be imposed before a suspension scaffold may be used.

c. Inspecting all suspension scaffold ropes prior to each work shift and after every occurrence which could affect a rope's integrity. Ropes shall be replaced if any of the conditions outlined in 29 CFR 1926.451(d)(10) exist.

d. Directly supervising the erection, moving, dismantling, or altering of all scaffolds used by staff.

6. Qualified Person - Shall be responsible for the following:

   a. The design, construction and loading of all scaffolds.

   b. Ensuring that swaged attachments or spliced eyes on wire suspension scaffolds are not used unless they are made by the wire rope manufacturer.

   c. Training each staff that performs work while on a scaffold to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or to minimize those hazards. This training is to be documented and signed copies to be given to the Administrative Assistant.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

SCAFFOLD SAFETY PROCEDURE

1. GENERAL: This procedure applies to all scaffold and aerial platform/lift operations for PSD60 Facilities.
2. CAPACITY: Taking into account the OSHA rules that must apply and the engineering/manufacturing requirements of our scaffolds, the following rules apply.

NOTE: The manufacturer's safety requirements for particular scaffold assemblies are included.

3. Each scaffold and scaffold component used will support, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
4. When non-adjustable suspension scaffolds are used, each suspension rope, including connecting hardware, will support, without failure, at least six times the maximum intended load applied or transmitted to that rope.
5. Capacity - Except as provided in this section, each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
6. Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.
7. Each suspension rope, including connecting hardware, used on non- adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.
8. Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.
9. The stall load of any scaffold hoist shall not exceed 3 times its rated load.
10. PLATFORM CONSTRUCTION - This section documents the procedures and safety requirements to construct scaffold platforms. The following safety rules apply for scaffold construction:
    a. Each scaffold plank will be installed so that the space between adjacent planks and the space between the platform and uprights is no more than one inch wide. If, in certain situations, it is required to make this space wider, the demonstration of this situation(s) will be in the appendix to this plan.
    b. Except for outrigger scaffolds (3 inches) and plastering and lathing operations (18 inches), the front edge of all platforms will not be more than 14 inches from the face of the work, unless we have a guardrail or personal fall arrest system in place that meets regulations [1926.451(b) Scaffold platform construction.
    c. Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:
    d. Each platform unit (e.g., scaffold plank, fabricated plank, or fabricated platform) shall be installed so that the space between adjacent units and the

space between the platform and the uprights is no more than 1 inch wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

e. Where the employer makes the demonstration provided for in this section, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9 ½ inches.

   Exception: The requirement to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees performing platform erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe working conditions is required.

f. Except as provided, each scaffold platform and walkway shall be at least 18 inches wide.

g. Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches wide. There is no minimum width required for boatswains' chairs.

   Where scaffolds must be used in areas that the employer can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches wide, such platforms and walkways shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.

h. Except as provided in this section, the front edge of all platforms shall not be more than 14 inches from the face of the work, unless guardrails are erected along the front edge and/or personal fall arrest systems are used in accordance with this section to protect employees from falling.

i. The maximum distance from the face for outrigger scaffolds shall be 3 inches.

j. The maximum distance from the face for plastering and lathing operations shall be 18 inches.

k. Each end of a platform, unless cleated or otherwise restrained by hooks or other equivalent means, shall extend over the centerline of its support at least 6 inches.

l. Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches unless the platform is designed and installed so that the cantilever portion of the platform is able to support employees and/or materials without tipping or has guardrails which block employee access to the cantilevered end.

m. Each platform greater than 10 feet in length shall not extend over its support more than 18 inches unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping or has guardrails which block employee access to the cantilevered end.

n. On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate support surface. This provision does not include the use of common support members, such as "T" sections,

to support abutting planks, or hook-on platforms designed to rest on common supports.

o. On platforms where scaffolds are overlapped to create a long platform, the overlap shall occur only over supports and shall not be less than 12 inches unless the platforms are nailed together or otherwise restrained to prevent movement.

p. At all points on the scaffold where the platform changes direction, such as turning a corner, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms which rest at right angles over the same bearer shall be laid second, on top of the first platform.

q. Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire retardant finishes, and slip resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.

r. Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffolds' structural integrity is maintained by the user. Scaffold components manufactured by different manufacturers shall not be modified in order to intermix them unless a competent person determines the resulting scaffold is structurally sound.

s. Scaffold components made of dissimilar metals shall not be used unless a competent person has determined that galvanic action will not reduce the strength of any component to a level below that required by this section.

SUPPORTED SCAFFOLDS

1. Supported scaffolds with a height to base width of more than four to one (4:1) must be restrained from tipping by guying, tying, bracing, or equivalent means.
2. Supported scaffold poles, legs, posts, frames, and uprights will always bear on base plates and mud sills or other adequate firm foundations [1926.451(c) Criteria for supported scaffolds.
3. Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:

   a. Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer legs.

   b. Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet or less thereafter for scaffolds 3 feet wide or less, and every 26 feet or less thereafter for scaffolds greater than 3 feet wide. The top guy, tie or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (measured from one end [not both] towards the other).

   c. Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

4. Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation.
5. Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
6. Unstable objects shall not be used to support scaffolds or platform units.
7. Unstable objects shall not be used as working platforms.
8. Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.
9. Fork-lifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied.
10. Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

SUSPENSION SCAFFOLDS

1. Before a scaffold is used, all direct connections will be evaluated by a competent person. The competent person will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads that will be imposed.
2. When winding drum hoists are used on a suspension scaffold, they will never contain less than four wraps of the suspension rope at the lowest point of scaffold travel. [1926.451(d) Criteria for suspension scaffolds.
3. All suspension scaffold support devices, such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).
4. Suspension scaffold outrigger beams, when used, shall be made of structural metal or equivalent strength material, and shall be restrained to prevent movement.
5. The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights, except masons' multi-point adjustable suspension scaffold outrigger beams shall not be stabilized by counterweights.
6. Before the scaffold is use, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed. In addition, masons' multi-point adjustable scaffold connections shall be designed by an engineer experienced in such scaffold construction.
7. Counterweights shall be made of non-flowable material. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.
8. Only those items specifically designed as counterweights shall be used to counterweight scaffold systems. Construction materials such ass, but not limited to, masonry units and rolls of roofing felt, shall not be used as counterweights.
9. Counterweights shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.

10. Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled.
11. Outrigger beams which are not stabilized by bolts or other direct connections to the floor or roof deck shall be secured by tiebacks.
12. Tiebacks shall be equivalent in strength to the suspension ropes.
13. Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). However, where the employer can demonstrate that it is not possible to place an outrigger beam perpendicular to the face of the building or structure because of obstructions that cannot be moved, the outrigger beam may be placed at some angle, providing opposing angle tiebacks are used.
14. Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorages include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.
15. Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.
16. Suspension scaffold outrigger beams shall be:
    a. Provided with stop bolts or shackles at both ends.
    b. Securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams.
    c. Installed with all bearing supports perpendicular to the beam center line.
    d. Set and maintained with the web in a vertical position; and
    e. When an outrigger beam is used, the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.
17. Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be:
    a. Made of steel, wrought iron, or materials of equivalent strength.
    b. Supported by bearing blocks; and
    c. Secured against movement by tiebacks installed at right angles to the face of the building or structure or opposing angle tiebacks shall be installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.
18. Tiebacks shall be equivalent in strength to the hoisting rope.
19. When winding drum hoists are used on a suspension scaffold, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension rope shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with a means to prevent the end from passing through the hoist.
20. The use of repaired wire rope as suspension rope is prohibited.
21. Wire suspension ropes shall not be joined together except through the use of eye splice thimbles connected with shackles or coverplates and bolts.

22. The load end of wire suspension ropes shall be equipped with proper size thimbles and secured by eyesplicing or equivalent means.
23. Ropes shall be inspected for defects by a competent person prior to each workshift and after each occurrence which could affect a rope's integrity. Ropes shall be replaced if any of the following conditions exist:
    a. Any physical damage which impairs the function and strength of the rope.
    b. Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).
    c. Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope or lay.
    d. Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
    e. Heat damage caused by a torch or any damage caused by contact with electrical wires.
    f. Evidence that the secondary brake has been activated during an overspeed condition and has engaged the suspension rope.
24. Swaged attachments or spliced eyes on wire suspension ropes shall not be used unless they are made by the rope manufacturer or a qualified person.
25. When wire rope clips are used on suspension scaffolds:
    a. There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart.
    b. Clips shall be installed according to the manufacturer's recommendations.
    c. Clips shall be retightened to the manufacturer's recommendations after the initial loading.
    d. Clips shall be inspected and retightened to the manufacturer's recommendations at the start of each work shift thereafter.
    e. U-bolt clips shall not be used at the point of suspension for any scaffold hoist.
    f. When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.
26. Suspension scaffold power-operated hoists and manual hoists shall be tested by a qualified testing laboratory.
27. Gasoline-powered equipment and hoists shall not be used on suspension scaffolds.
28. Gears and brakes of power-operated hoists used on suspension scaffolds shall be enclosed.
29. In addition to the normal operating brake, suspension scaffold power-operated hoists and manually operated hoists shall have a braking device or locking pawl which engages automatically when a hoist makes either of the following uncontrolled movements: an instantaneous change in momentum or an accelerated overspeed.
30. Manually operated hoists shall require a positive crank force to descend.
31. Two-point and multi-point suspension scaffolds shall be tied or otherwise secured to prevent them from swaying, as determined to be necessary based on an

evaluation by a competent person. Window cleaners' anchors shall not be used for this purpose.

32. Devices whose sole function is to provide emergency escape and rescue shall not be used as working platforms. This provision does not preclude the use of systems which are designed to function both as suspension scaffolds and emergency systems.

GAINING ACCESS TO SCAFFOLDS

1. Getting to the working platform is critical to the safety of our staff. This section outlines the mechanical requirements for gaining access to scaffold platforms such as: (1) ladders, (2) ramps and walkways, (3) stairs, and (4) direct access from another scaffold.
2. Working staff:
3. Portable, hook-on, and attachable ladders will be positioned so as not to tip the scaffold.
4. All stair systems and handrails will be surfaced to prevent injury to our Staff from punctures or lacerations, and to prevent snagging of their clothes.
5. [1926.451(e) Access. This paragraph applies to scaffold access for all employees. Access requirements for employees erecting or dismantling supported scaffolds are specifically addressed in this section.
6. When scaffold platforms are more than 2 feet above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers, stairway type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Crossbraces shall not be used as a means of access.
7. Portable, hook-on, and attachable ladders (Additional requirements for the proper construction and use of portable ladders are contained in - Stairways and Ladders:
    a. Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold.
    b. Hook-on and attachable ladders shall be positioned so that their bottom rung is not more than 24 inches above the scaffold supporting level.
    c. When hook-on and attachable ladders are used on a supported scaffold more than 35 feet high, they shall have rest platforms at 35-foot maximum vertical intervals.
    d. Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold used.
    e. Hook-on and attachable ladders shall have a minimum rung length of 11 ½ inches; and
    f. Hook-on and attachable ladders shall have uniformly spaced rungs with a maximum spacing between rungs of 16 ¾ inches.
8. Stairway-type ladders shall:
    a. Be positioned such that their bottom step is not more than 24 inches above the scaffold supporting level.
    b. Be provided with rest platforms at 12-foot maximum vertical intervals.

c. Have a minimum step width of 16 inches, except that mobile scaffold stairway-type ladders shall have a minimum step width of 11 ½ inches; and

d. Have slip-resistant treads on all steps and landings.

9. Stairtowers (scaffold stairway/towers) shall be positioned such that their bottom st4ep is not more than 24 inches above the scaffold supporting level.
10. A stairrail consisting of a toprail and a midrail shall be provided on each side of each scaffold stairway.
11. The toprail of each stairrail system shall also be capable of serving as a handrail, unless a separate handrail is provided.
12. Handrails, and toprails that serve as handrails, shall provide an adequate handhold for employees grasping them to avoid falling.
13. Stairrail systems and handrails shall be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
14. The ends of stair rail systems and handrails shall be constructed so that they do not constitute a projection hazard.
15. Handrails and toprails that are used as handrails, shall be at least 3 inches from other objects.
16. Stair rails shall be not less than 28 inches nor more than 37 inches from the upper surface of the stair rail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
17. A landing platform at least 18 inches wide by at least 18 inches long shall be provided at each level.
18. Each scaffold stairway shall b eat least 18 inches wide between stairrails.
19. Treads and landings shall have slip-resistant surfaces.
20. Stairways shall be installed between 40 degrees and 60 degrees from the horizontal.
21. Guardrails meeting the requirements of this section shall be provided on the open sides and at the ends of each landing.
22. Riser height shall be uniform, within ¼ inch for each flight of stairs. Greater variations in riser height are allowed for the top and bottom steps of the entire system, not for each flight of stairs.
23. Tread depth shall be uniform, within ¼ inch, for each flight of stairs.

Ramps and walkways:

1. Ramps and walkways 6 feet or more above lower levels shall have guardrail systems which comply with subpart M of this part-Fall Protection.
2. No ramp or walkway shall be inclined more than a slope of one (10 vertical to three (3) horizontal 920 degrees above the horizontal).
3. If the slope of a ramp or a walkway is steeper than one (10 vertical in eight (8) horizontal, the ramp or walkway shall have cleats not more than fourteen (140 inches) apart which are securely fastened to the planks to provide footing.
4. Integral prefabricated scaffold access frames shall:

   a. Be specifically designed and constructed for use as ladder rungs.

   b. Have a rung length of at least 8 inches.

c. Not be used as work platforms when rungs are less than 11 ½ inches in length, unless each affected employee uses fall protection, or a positioning device, which complies with 1926.502.

d. Be uniformly spaced within each frame section.

e. Be provided with rest platforms at 35-foot maximum vertical intervals on all supported scaffolds more than 35 feet high; and

f. Have a maximum spacing between rungs of 16 ¾ inches. Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16 ¾ inches.

5. Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.

6. Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches (36 cm) horizontally and not more than 24 inches (61 cm) vertically from the other surface.

7. Access for employees erecting or dismantling supported scaffolds shall be in accordance with the following:

   a. The employer shall provide safe means of access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. The employer shall have a competent person determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

   b. Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

   c. When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand and foot space.

   d. Cross braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

Erectors and Dismantlers:

Note: Access for employees erecting or dismantling supported scaffolds must be in accordance with § 1926.451(e)(9).

FALL PROTECTION PLAN

1. Fall protection planning is critical to the safety and wellbeing of our staff. Our fall protection plan follows the OSHA requirements which are different depending on the type of scaffold we are using. In this plan we address fall protection for our scaffold erectors and dismantlers separately. Fall protection MUST be provided for any staff on a scaffold more than 10 feet above a lower level.

2. Working Staff:

   a. Single- or two-point adjustable suspension scaffold - Each staff on our single- or two-point adjustable suspension scaffolds will be protected by a personal fall arrest system. Our personal fall arrest systems:

   b. Shall meet the requirements of § 1926.502(d)(OSHA’s Fall Protection Rule).

   c. Shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member.

3. [1926.451(g)(3) In addition to meeting the requirements of 1926.502(d), personal fall arrest systems used on scaffolds shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.
4. When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.
5. When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.
6. When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.
7. Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.
8. Self-contained adjustable scaffold supported by the frame structure-We will protect each staff on our self-contained, frame structure supported, adjustable scaffolds by a guardrail system. The guardrail system:
   a. Has a minimum 200-pound top rail capacity; and
   b. Shall be installed before being released for use by our Staff.
9. [1926.451(g)(4) guardrail systems installed to meet the requirements of this section shall comply with the following provisions (guardrail systems built in accordance with this subpart will be deemed to meet the requirements of this section):
   a. Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.
   b. The top edge height of toprails or equivalent member on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches and 45 inches above the platform surface. The top edge height on supported scaffolds placed in service before January 1, 2000, and on all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches and 45 inches. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph.

c. When midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.

d. When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

e. When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.

f. When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches apart.

10. Each toprail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge for at least 100 pounds for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds for guardrail systems installed on all other scaffolds.

11. When the loads specified in this section are applied in a downward direction, the top edge shall not droop below the height above the platform surface that is prescribed in this section.

12. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 75 pounds for guardrail systems with a minimum 100-pound toprail capacity, and at least 150 pounds for guardrail systems with a minimum 200-pound toprail capacity.

13. Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.

14. Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

15. The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.

16. Steel or plastic banding shall not be used as a toprail or midrail.

17. Manila or plastic (or other synthetic) rope being used for toprails or midrails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the strength requirements of this section.

18. Cross bracing is acceptable in place of a midrail when the crossing point of two braces is between 20inches and 30 inches above the work platform or as a toprail when the crossing point of two braces is between 38 inches and 48 inches above the work platform. The end points at each upright shall be no more than 48 inches apart.

FALLING OBJECT PROTECTION

1. All Staff shall wear hard-hats when working on, assembling, or dismantling scaffolds. This is our primary protection from falling objects. Additionally, we shall:

   a. Install guardrail systems with openings small enough to prevent passage of potential falling objects.
   b. Prevent tools, materials, or equipment that inadvertently fall from our scaffolds from striking any person(s) by barricading the area below the scaffold.
2. [1926.451(h) Falling object protection.
3. In addition to wearing hard-hats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, canopy structures that contain or deflect the falling objects. When falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measurers, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.
4. Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:
   a. The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area; or
   b. A toeboard shall be erected along the edge of the platforms more than 10 feet above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of ¾ x 1½ inch wood or equivalent may be used in lieu of toe boards.
   c. Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below; or
   d. A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or
   e. A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.
5. Canopies, when used for falling object protection, shall comply with the following criteria:
   a. Capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toeboard (toeboards built in accordance with this subpart will be deemed to meet this requirement); and
   b. At least three and one-half inches high from the top edge of the toeboard to the level of the walking/working surface. Toeboards shall be securely fastened in place at the outermost edge of the platform and have not more than ¼ inch clearance above the walking/working surface. Toeboards shall be solid or with openings not over one inch in the greatest dimension.

USING SCAFFOLDS

1. Site preparation, scaffold erection, fall protection, and gaining access to the working platform are only part of the requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when Staff are concentrating on their work and are not particularly aware of the

hazards of working from scaffolds. It is critical that Staff who use scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Our competent person shall inspect all scaffolds and scaffold components for visible defects before each work shift and after any occurrence which could affect a scaffold's structural integrity. In addition, all users of scaffolds in Facilities shall know and understand the following safety rules:

a. Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.

b. Debris must not be allowed to accumulate on platforms.

c. Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.

d. [1926.451(f) Use.

e. Scaffolds and scaffold components shall not be loaded in excess of their maximum intended loads or rated capacities; whichever is less.

f. The use of shore or lean-to scaffolds is prohibited.

g. Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

h. Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

i. Scaffolds shall not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement or, for mobile scaffolds, where the provisions of §1926.425(w) are followed.

j. The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than (see table §1926.451(f)(6). Exception to paragraph (f)(6): Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

k. Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only be experienced and trained employees selected for such work by the competent person.

l. Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

m. Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

n. Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.

o. Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.

p. Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

q. Debris shall not be allowed to accumulate on platforms.

r. Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level of employees.

2. Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:

   a. When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder.

   b. The platform units shall be secured to the scaffold to prevent their movement.

   c. The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection; and

   d. The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

3. Platforms shall not deflect more than 1/60 of the span when loaded.

4. To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:

   a. An insulated thimble shall be used to attach each suspension wire rope to its hanging support (such as cornice hook or outrigger). Excess suspension wire rope and any additional independent lines from grounding shall be insulated.

   b. The suspension wire rope shall be covered with insulating material extending at least 4 feet above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so that it does not become grounded.

   c. Each hoist shall be covered with insulated protective covers.

   d. In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure.

   e. If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off; and

f. An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

SPECIFIC PROCEDURES

1. In addition to the general procedures in this written safety plan, there are procedures that apply to specific types of scaffolds. The safety rules for these specific types of scaffolds are found in § 1926.452.
2. [1926.452 Additional requirements applicable to specific types of scaffolds. In addition to the applicable requirements of § 1926.451, the following requirements apply to the specific types of scaffolds indicated. Scaffolds not specifically addressed by § 1926.452, such as but not limited to systems scaffolds, must meet the requirements of § 1926.451.
3. Pole Scaffolds:
   a. When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced, prior to receiving the new platforms.
   b. Crossbracing shall be installed between the inner and outer sets of poles on double pole scaffolds.
   c. Diagonal bracing in both directions shall be installed across the entire inside face of double-pole scaffolds used to support loads equivalent to a uniformly distributed load of 50 pounds or more per square foot.
   d. Diagonal bracing in both directions shall be installed across the entire outside face of all double- and single-pole scaffolds.
   e. Runners and bearers shall be installed on edge.
   f. Bearers shall extend a minimum of 3 inches over the outside edges of runners.
   g. Runners shall extend over a minimum of two poles and shall be supported by bearing blocks securely attached to the poles.
   h. Braces, bearers, and runners shall not be spliced between poles.
   i. Where wooden poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall extend at least 2 feet on either side of the splice, overlap the abutted ends equally, and have at least the same cross-sectional areas as the pole. Splice plates of other materials of equivalent strength may be used.
   j. Pole scaffolds over 60 feet in height shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with that design.
4. Tube and coupler scaffolds:
   a. When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced prior to receiving the new platform.
   b. Transverse bracing forming an “X” across the width of the scaffold shall be installed at the scaffold ends and at least at every third set of posts horizontally (measured from only one end) and at every fourth runner vertically. Bracing shall extend diagonally from the inner or outer posts or runners upward to the next outer or inner posts or runners. Building ties shall

be installed at the bearer levels between the transverse bracing and shall conform to the requirements of § 1926.451(c)(10.

c. On straight run scaffolds, longitudinal bracing across the inner and outer rows of posts shall be installed diagonally in both directions and shall extend from the base to the end posts upward to the top of the scaffold at approximately a 45-degree angle. On scaffolds whose length is greater than their height, such bracing shall be repeated beginning at least at every fifth post. On scaffolds whose length is less than their height, such bracing shall be installed from the base of the end posts upward to the opposite end posts, and then in alternating directions until reaching the top of the scaffold. Bracing shall be installed as close as possible to the intersection of the bearer and post or runner and post.

d. Where conditions preclude the attachment of bracing to posts, bracing shall be attached to the runners as close to the post as possible.

e. Bearers shall be installed transversely between posts, and when coupled to the posts, shall have the inboard coupler bear directly on the runner coupler. When the bearers are coupled to the runners, the couplers shall be as close to the posts as possible.

f. Bearers shall extend beyond the posts and runners and shall provide full contact with the coupler.

g. Runners shall be installed along the length of the scaffold, locate on both the inside and outside posts at level heights (when tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outside runners).

h. Runners shall be interlocked on straight runs to form continuous lengths and shall be coupled to each post. The bottom runners and bearers shall be located as close to the base as possible.

i. Couplers shall be of structural metal, such as drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

j. Tube and coupler scaffolds over 125 feet in height shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

5. Fabricated frame scaffolds (tubular welded frame scaffolds):

a. When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.

b. Frames and panels shall be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections shall be secured.

c. Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.

d. When uplift can occur which would displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means.

6. Brackets used to support cantilevered loads shall:

a. Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames.

b. Not be bent or twisted from this position; and

c. Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold.

7. Scaffolds over 125 feet height above their base plates shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

8. Plasters', decorators', and large area scaffolds. Scaffolds shall be constructed in accordance with this section, as appropriate.

9. Bricklayers' square scaffolds (squares):

   a. Scaffolds made of wood shall be reinforced with gussets on both sides of each corner.

   b. Diagonal braces shall be installed on all sides of each square.

   c. Diagonal braces shall be installed between squares on the rear and front sides of the scaffold and shall extend from the bottom of each square to the top of the next square.

   d. Scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square rests directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and shall be nailed down or otherwise secured to prevent displacement.

10. Horse scaffolds:

    a. Scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height, whichever is less.

    b. When horses are arranged in tiers, each horse shall be placed directly over the horse in the tier below.

    c. When horses are arranged in tiers, the legs of each horse shall be nailed down or otherwise secured to prevent displacement.

    d. When horses are arranged in tiers, each tier shall be cross- braced.

    e. Form scaffolds and carpenters' bracket scaffolds.

    f. Except bracket, except those for wooden bracket-form scaffolds, shall be attached to the supporting formwork or structure by means of one or more of the following: nails; a metal stud attachment device; welding; hooking over a secured structural supporting member, with the form walls either bolted to the form or secured by snap ties or tie bolts extending through the form and securely anchored; or, for carpenters' bracket scaffolds only, by a bolt extending through to the opposite side of the structure's wall.

    g. Wooden bracket-form scaffolds shall be an integral part of the form panel.

    h. Folding type metal brackets, when extended for use, shall be either bolted or secured with a locking-type pin.

11. Roof bracket scaffolds.

    a. Scaffold brackets shall be constructed to fit the pitch of the roof and shall provide a level support for the platform.

b. Brackets (including those provided with pointed metal projections) shall be anchored in place by nails unless it is impractical to use nails. When nails are not used, brackets shall be secured in place with first-grade manila rope of at least three-fourth inch diameter, or equivalent.

12. Outrigger scaffolds.

a. The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of anchorage, shall be not less than one and one-half times the outboard end in length.

b. Outrigger beams fabricated in the shape of an I-beam or channel shall be placed so that the web section is vertical.

c. The fulcrum point of outrigger beams shall rest on secure bearings at least 6 inches in each horizontal dimension.

d. Outrigger beams shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

e. The inboard ends of outrigger beams shall be securely anchored either by means of braced struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both.

f. The entire supporting structure shall be securely braced to prevent any horizontal movement.

g. To prevent their displacement, platform units shall be nailed, bolted, or otherwise secured to outriggers.

h. Scaffolds and scaffold components shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

13. Pump jack scaffolds.

a. Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive griping mechanisms to prevent any failure or slippage.

b. Poles shall be secured to the structure by rigid triangular bracing or equivalent at the bottom, top, and other points as necessary. When the pump jack has to pass bracing already installed, an additional brace shall be installed approximately 4 feet above the brace to be passed and shall be left in place until the pump jack has been removed and the original brace reinstalled.

c. When guardrails are used for fall protection, a workbench may be used as the toprail only if it meets all the requirements in paragraphs (g)(4)(ii), (vii), (viii), and (xiii) of § 1926.451.

d. Workbenches shall not be used as scaffold platforms.

e. When poles are made of wood, the pole lumber shall be straight-grained, free of shakes, large loose or dead knots, and other defects which might impair strength.

f. When wood poles are constructed of two continuous lengths, they shall be joined together with the seam parallel to the bracket.

g. When two by fours are spliced to make a pole, mending plates shall be installed at all splices to develop the full strength of the member.

14. Ladder jack scaffolds:
    a. Platforms shall not exceed a height of 20 feet.
    b. All ladders used to support ladder jack scaffolds shall meet the requirements of this part- Stairways and Ladders, except that job-made ladders shall not be used to support ladder jack scaffolds.
    c. The ladder jack shall be so designed and constructed that it will bear on the side rails and ladder rungs or on the ladder rungs alone. If bearing on rungs only, the bearing area shall include a length of at least 10 inches on each rung.
    d. Ladders used to support ladder jack shall be placed, fastened, or equipped with devices to prevent slipping.
    e. Scaffold platforms shall not be bridged one to another.
15. Window jack scaffolds.
    a. Scaffolds shall be securely attached to the window opening.
    b. Scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.
    c. Window jacks shall not be used to support planks placed between one window jack and another, or for other elements of scaffolding.
16. Crawling boards (chicken ladders).
    a. Crawling boards shall extend from the roof peak to the eaves when used in connection with roof construction, repair, or maintenance.
    b. Crawling boards shall be secured to the roof by ridge hooks or by means that meet equivalent criteria (e.g., strength and durability).
17. Step, platform, and trestle ladder scaffolds.
    a. Scaffold platforms shall not be placed any higher than the second highest rung or step of the ladder supporting the platform.
    b. All ladders used in conjunction with step, platform, and trestle ladder scaffolds shall meet the pertinent requirements of this part- Stairways and Ladders, except that job-made ladders shall not be used to support such scaffolds.
    c. Ladders used to support step, platform, and trestle ladder scaffolds shall be placed, fastened, or equipped with devices to prevent slipping.
    d. Scaffolds shall not be bridged one to another.
18. Single-point adjustable suspension scaffolds.
    a. When two single-point adjustable suspension scaffolds are combined to form a two-point adjustable suspension scaffold, the resulting two-point scaffold shall comply with the requirements for two-point adjustable suspension scaffolds in this section.
    b. The supporting rope between the scaffold and the suspension device shall be kept vertical unless all of the following conditions are met:
    c. The rigging has been designed by a qualified person, and
    d. The scaffold is accessible to rescuers

e. The supporting rope is protected to ensure that it will not chafe at any point where a change is direction occurs, and

f. The scaffold is positioned so that swinging cannot bring the scaffold into contact with another surface.

19. Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly "eye-spliced" minimum five-eighth (5/8) inch diameter first-grade manila rope, or other rope which will satisfy the criteria (e.g., strength and durability) of manila rope.

    a. Boatswains' chair seat slings shall be reeved through four corners holes in the seat; shall cross each other on the underside of the seat; and shall be rigged so as to prevent slippage which could cause an out-of level condition.

    b. Boatswains' chair seat slings shall be a minimum of five-eighth (5/8) inch diameter fiber, synthetic, or other rope which will satisfy the criteria (e.g., strength, slip resistance, durability, etc.) of first grade manila rope.

    c. When a heat-producing process such as gas or arc welding is being conducted, boatswains' chair seat slings shall be a minimum of three-eighth (3/8) inch wire rope.

    d. Non-cross-laminated wood boatswains' chairs shall be reinforced on their underside by cleats fastened to prevent the board from splitting.

20. Two-point adjustable suspension scaffolds (swing stages). The following requirements do not apply to two-point adjustable suspension scaffolds used as masons' or stonesetters' scaffolds. Such scaffolds are covered by this section.

21. Platforms shall not be more than 36 inches wide unless designed by a qualified person to prevent unstable conditions.

22. The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means which satisfy the requirements of § 1926.451(a).

23. The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.

24. Platforms shall be of the ladder-type, plank-type, beam-type, or light metal-type. Light metal-type platforms having a rated capacity of 750 pounds or less and platforms 40 feet or less in length shall be tested and listed by a nationally recognized testing laboratory.

25. Toe-point scaffolds shall not be bridged or otherwise connected to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.

26. Passage may be made from one platform to another only when the platforms are at the same height, are abutting, and walk-through stirrups specifically designed for this purpose are used.

27. Multi-point adjustable suspension scaffolds, stonesetters' multi-point adjustable suspension scaffolds, and masons' multi-point adjustable suspension scaffolds.

28. When two or more scaffolds are used they shall not be bridged one to another unless they are designed to be bridged, the bridge connections are articulated, and the hoists are properly sized.

29. If bridges are not used, passage may be made from one platform to another only when the platforms are at the same height and are abutting.

30. Scaffolds shall be suspended from metal outriggers, brackets, wire rope slings, hooks, or means that meet equivalent criteria (e.g., strength, durability).
31. Catenary scaffolds:
    a. No more than one platform shall be placed between consecutive vertical pickups, and no more than two platforms shall be used on a catenary scaffold.
    b. Platforms supported by wire ropes shall have hook-shaped stops on each end of the platforms to prevent them from slipping off the wire ropes. These hooks shall be so placed that they will prevent the platform from falling if one of the horizontal ropes breaks.
    c. Wire ropes shall not be tightened to the extent that the application of a scaffold load will overstress them.
    d. Wire ropes shall be continuous and without splices between anchors.
32. Float (ship) scaffolds:
    a. The platforms shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 inches beyond the platform on both sides. Each bearer shall be securely fastened to the platform.
    b. Rope connections shall be such that the platform cannot shift of slip.
    c. When only two ropes are used with each float:
    d. They shall be arranged so as to provide four ends which are securely fastened to overhead supports.
    e. Each supporting rope shall be hitched around one end on the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.
33. Interior hung scaffolds:
    a. Scaffolds shall be suspended only from the roof structures or other structural member such as ceiling beams.
    b. Overhead supporting members (roof structure, ceiling beams, or other structural members) shall be inspected and checked for strength before the scaffold is erected.
    c. Suspension ropes and cables shall be connected to the overhead supporting members by shackles, clips, thimbles, or other means that meet equivalent criteria (e.g., strength, durability).
34. Needle beam scaffolds:
    a. Scaffold support beams shall be installed on edge.
    b. Ropes or hangers shall be used for supports, except that one end of a needle beam scaffold may be supported by a permanent structural member.
    c. The ropes shall be securely attached to the needle beams.
    d. The support connection shall be arranged so as to prevent the needle beam from rolling or becoming displaced.
    e. Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.
35. Multi-level suspended scaffolds:

a. Scaffolds shall be equipped with additional independent support lines, equal in number to the number of points supported, and of equivalent strength to the suspension ropes, and rigged to support the scaffold in the event the suspension rope(s) fail.

b. Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

c. Supports for platforms shall be attached directly to the support stirrup and not to any other platform.

36. Mobile scaffolds:

a. Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

b. Scaffolds constructed of tube and coupler components shall also comply with the requirements of this section.

c. Scaffolds constructed of fabricated frame components shall also comply with the requirements of this section.

d. Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.

e. Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet above the supporting surface.

f. Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.

g. Scaffolds shall be stabilized to prevent tipping during movement.

37. Employees shall not be allowed to ride on scaffolds unless the following conditions exist:

a. The surface on which the scaffold is being moved is within 3 degrees of level, and free of pits, holes, and obstructions.

b. The height to base width ratio of the scaffold during movement is two to one or less, unless the scaffold is designed and constructed to meet or exceed nationally recognized stability test requirements such as those listed in this subpart (ANSI/SIA A92.5 and A92.6);

c. Outrigger frames, when used, are installed on both sides of the scaffold.

d. When power systems are used, the propelling force is applied directly to the wheels and does not produce a speed in excess of 1 foot per second.

e. No employee is on any part of the scaffold which extends outward beyond the wheels, casters, or other supports.

f. Platforms shall not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

g. Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used.

h. Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs by adjustment screws.

i. Before a scaffold is moved, each employee on the scaffold shall be made aware of the move.

38. Repair bracket scaffolds.

a. Brackets shall be secured in place by at least one wire rope at least ½ inch in diameter.

b. Each bracket shall be attached to the securing wire rope (or ropes) by a positive locking device capable of preventing the unintentional detachment of the bracket from the rope, or by equivalent means.

c. Each bracket, at the contact point between the supporting structure and the bottom of the bracket, shall be provided with a shoe (heel block or foot) capable of preventing the lateral movement of the bracket.

d. Platforms shall be secured to the brackets in a manner that will prevent the separation of the platforms from the brackets and the movement of the platforms or the brackets on a complete scaffold.

e. When a wire rope is placed around the structure in order to provide a safe anchorage for personal fall arrest systems used by employees erecting or dismantling scaffolds, the wire rope shall meet the requirements of this part but shall be at lest 5/16 inch in diameter.

f. Each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be protected from damage due to contact with edges, corners, protrusions, or other discontinuities of the supporting structure or scaffold components.

g. Tensioning of each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be by means of a turnbuckle at least 1 inch in diameter, or by equivalent means.

h. Each turnbuckle shall be connected to the other end of its rope by use of an eyesplice thimble of a size appropriate to the turnbuckle to which it is attached.

i. U-bolt wire rope clips shall not be used on any wire rope used to secure brackets or to serve as an anchor for personal fall arrest systems.

j. The employer shall ensure that material shall not be dropped to the outside of the supporting structure.

k. Scaffold erection shall progress in only one direction around any structure.

l. Stilts. Stilts when used, shall be used in accordance with the following requirements:

m. An employee may wear stilts on a scaffold only if it is a large area scaffold.

n. When an employee is using stilts on a large area scaffold where a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height of the stilts being used by the employee.

o. Surfaces on which stilts are used shall be flat and free of pits, holes and obstructions, such as debris, as well as other tripping and falling hazards.

p. Stilts shall be properly maintained. Any alteration of the original equipment shall be approved by the manufacturer.

PROHIBITED PRACTICES

1. The following practices shall never be tolerated:
    a. Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
    b. Unstable objects will never be used to support scaffolds or platform units. Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
    c. Cross braces will never be used as a means of access.
    d. The use of shore or lean-to scaffolds is prohibited.

<u>AERIAL LIFTS/PLATFORMS PROCEDURES</u>

1. Anytime aerial lifts/platforms, including: (1) extensible boom platforms, (2) aerial ladders, (3) articulating boom platforms, (40 vertical towers, or (50 a combination or any such devices, are used to elevate employees to jobsites above ground, the following safety rules, Operation of Aerial Lifts/Platforms shall apply:
2. Only authorized Staff (Those who have been properly trained and certified.) shall operate an aerial lift/platform.
3. A body harness shall be worn and a lanyard attached to the boom or basket when working from an aerial lift/platform.
4. No aerial lift/platform owned or used by the PSD60 will be "field modified" for uses other than those intended by the manufacturer unless:
5. The manufacturer certifies the modification in writing; or
6. Any other equivalent entity, such as a nationally recognized testing laboratory, certifies the aerial lift/platform modification conforms to all applicable provisions of ANSI A92.2-1969, and the OSHA regulations found in § 1926.453. The lift/platform must be at least as safe as the equipment was before modification.

LADDER TRUCKS AND TOWER TRUCKS

1. Only authorized Staff (Those who have been properly trained and certified) shall operate a ladder truck or tower truck.
2. Aerial ladders shall be secured in the lower traveling position by the locking device on top of the truck cab and the manually operated device at the base of the ladder before the truck is moved for highway travel.

EXTENSIBLE AND ARTICULATING BOOM PLATFORMS

1. Only authorized staff (those who have been properly trained and certified) shall operate an extensible or articulating boom platform.
2. Lift controls shall be tested each day prior to use to determine that they are in safe working condition.
3. A body harness shall be worn and a lanyard attached to the boom or basket when working from an extensible or articulating boom platform.

TRAINING

1. Training is required for Competent Person(s), Qualified Person(s), and all staff who:
    a. Perform work while on scaffolds.

b. Are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds; and

c. Have lost the requisite proficiency.

2. The following training syllabus is a part of this written safety plan. This training shall be documented, retained by the Administrative Assistant, and should include the staff's name and social security number, the Staff signature or initials, the name of the instructor, the location, date, hours of training, and a brief summary of the topics covered in the training.

   a. Competent Person:

      i. Must be knowledgeable about the requirements of the various scaffold standards and have sufficient training or knowledge to identify and sufficient authority to correct hazards encountered in scaffold work.

      ii. Must have specific training in and be knowledgeable regarding the structural integrity of scaffolds and procedures needed to maintain them. For example, a competent person must be able to evaluate the effects of such potentially damage-causing occurrences as a dropped load or a truck backing into a supporting leg.

   b. Qualified Person(s)

      i. Must have the training necessary to design scaffolds, solve and resolve problems related to the subject matter, the work or the project by virtue of a recognized degree, certificate, or professional standing, or by extensive knowledge, training and experience.

   c. Staff Who Use Scaffolds - Staff who perform work on scaffolds shall be trained by a competent person to recognize the hazards associated with the type of scaffold being used and to understand the procedure to control or minimize those hazards. The training shall include the following areas as applicable:

      i. The nature and the correct procedures for dealing with electrical hazards.

      ii. The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object systems used.

      iii. The proper sue of the scaffold, and the proper handling of materials on the scaffold.

      iv. The maximum intended loads and the load-carrying capacities of the scaffolds used.

      v. Any other pertinent requirements of the OSHA rules.

   d. Staff Who Erect, Dissemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds - Staff who perform this type of work shall be trained by a competent person to recognize the hazards associated with the work being done. The training shall include the following topics as applicable:

      i. General Overview of Scaffolding

      ii. Regulations and Standards.

      iii. The nature of scaffold hazards.

      iv. Erection/dismantling planning & procedures.

      v. The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.

vi. The correct procedures for erecting, disassembling, moving, operating, repairing, inspection, and maintaining the type of scaffold in question.

vii. PPE and proper procedures.

viii. Fall protection.

ix. Material handling.

x. Access.

xi. Working platforms.

xii. Foundations.

xiii. Guys, ties, and braces.

xiv. Any other pertinent requirements of this subpart.

xv. Tubular Welded Frame Scaffolds.

xvi. Specific regulations and standards.

xvii. Components.

xviii. Parts inspection.

xix. General safety.

xx. Rolling scaffold assembly.

xxi. Putlogs.

xxii. Tube and Clamp Scaffolds and System Scaffolds.

xxiii. Buttresses, cantilevers and bridges.

3. Staff Who Need Retraining:

   a. When there is reason to believe that one of our Staff lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, the staff shall be re-trained so that the requisite proficiency is regained. Retraining shall be done in at least the following situations:

      i. Where changes at the worksite present a hazard about which the staff has not been previously trained.

      ii. Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which a staff has not been previously trained.

      iii. Where inadequacies in an affected staff's work involving scaffolds indicate that the staff has not retained the requisite proficiency.

PURPOSE

Facilities will ensure that respiratory hazards within our facilities are evaluated, and that information concerning these hazards is transmitted to all Staff. This procedure is intended to address comprehensively the following issues; evaluating the potential respiratory hazards, communicating information concerning these hazards, establishing appropriate engineering, work practice, or respiratory protective measures for Staff. In addition, this procedure addresses the selection, use, care, inspection, storage, testing of respiratory equipment and the training of those Staff who use this equipment. Refer to: OSHA - 29 CFR 1910.134

DEFINITIONS

CHEMICAL CARTRIDGE RESPIRATORS - protect against gases and vapors. These respirators do not provide oxygen so they SHOULD NOT BE USED in areas where there is an oxygen deficient atmosphere. These respirators SHOULD NOT BE USED when the chemical in the atmosphere to be protected against does not have warning properties such as odor, taste, or irritation. These respirators ARE NOT TO BE USED as protection against anything that could cause immediate danger to life or health except for escape. Chemical cartridges are made to be chemical specific and SHOULD NOT BE USED for other chemical atmospheres.

DISPOSABLE MASK - one which does not contain replacement filters and is secured to the head by one or two straps. These masks in the past were referred to as dust masks and are not for use in oxygen deficient or hazardous atmospheres.

DUST - are solid particles produced by processes such as grinding, crushing, and mixing. Example: asbestos, ceramics, clay, etc.

FUMES - are tiny particles given off when metals are heated in processes such as welding, soldering, casting, and galvanizing. Example: Zinc fumes.

GASES & VAPORS - are substances which are neither liquid nor solids. Substances such as chlorine and carbon dioxide exist under normal conditions in gaseous states. They become liquid under pressure. Vapors are like gases except that they are formed by the evaporation of substances such as water which occur ordinarily as liquids.

IMMEDIATELY DANGEROUS TO LIFE OR HELATH (IDLH) - Any condition that poses an immediate or delayed threat to life or that would cause irreversible health effects or that would interfere with an individual's ability to escape unaided from a given area.

MECHANICAL FILTERING RESPIRATORS - protect against dust, fumes, and mists. They filter out harmful substances from breathing air before it is inhaled. These respirators do not provide oxygen so they SHOULD NOT BE USED in areas where there is an oxygen deficient atmosphere. They DO NOT PROTECT against gases or vapors.

MISTS - are tiny liquid droplets given off when liquids are sprayed, mixed or agitated in processes such as dipping, painting, and machining. Example: spray paint.

OXYGEN DEFICIENT ATMOSPHERE - an atmosphere containing less than 19.5 percent oxygen by volume. Oxygen-deficient atmospheres occur when the oxygen in the air has been used up by processes such as rusting, fire, or when another gas

pushes oxygen out. Oxygen- deficiencies occur most often in confined spaces such as tanks, boilers, tunnels, sewers, or deep excavations.

SELF CONTAINED BREATHING APPARATUS (SCBA) - can protect the wearer against almost all hazards and supply clean air to the user. SCBA's supply clean air from a tank worn on the user's back. The air supply is limited to the amount of air the cylinder can hold. These devices may be used to enter IDLH (immediate danger to life and health) atmosphere.

RESPONSIBILITIES

1. The Executive Director has the overall responsibility for the administration of this procedure.
2. Supervisors and Managers are responsible for determining what specific applications require the use of respiratory equipment, providing proper respiratory equipment to meet the needs of each specific application and ensuring that proper training is given to all Staff.
3. Supervisors are responsible to establish and maintain this respiratory program whenever respirators are used, ensure that all Staff under their control are completely knowledgeable of the respiratory protection requirements for the areas in which they work, and that all Staff designated for these duties comply with all facets of this respiratory program, including respirator inspection, maintenance, fit testing, and training. Training will be documented and provided to the Administrative Assistant.
4. Staff are responsible for using respiratory protection in accordance with instructions and training received and is responsible for guarding against damage to the respirator, to immediately replace suspect respirators, reporting any trouble with or malfunction of the respirator to his/her supervisor, and maintaining the equipment in a clean and operable condition.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director

Effective: 10/01/2026
Supersedes any previous

RESPIRATOR SAFETY PROCEDURE

1. When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.
2. Respirators. Respirators shall be provided by Facilities when such equipment is necessary to protect the health of the Staff. Facilities Supervisor(s) shall:
    a. Provide the respirators which are applicable and suitable for the purpose intended.
    b. Be responsible for the establishment and maintenance of this written respiratory protective program which shall include the requirements outlined in 29 CFR 1910.134.
3. Staff will not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. A physician shall determine what health and physical conditions are pertinent. The respirator user's medical status will be reviewed on an ANNUAL basis.
4. Staff shall use the provided respiratory protection in accordance with instructions and training received.
5. Respirators shall be selected on the basis of hazards to which the worker is exposed.
6. The user shall be instructed and trained in the proper use of respirators and their limitations.
7. Respirators shall be regularly cleaned and disinfected BY THE USER at the end of each work shift when they have been used.
8. Respirators shall be stored by the user in a convenient, clean, and sanitary location.
9. Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use by the supervisor or lead worker.
10. Appropriate surveillance of work area conditions and degree of Staff exposure or stress shall be maintained.
11. There shall be regular inspection and evaluation to determine the continued effectiveness of the program.
12. NIOSH approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed.

RESPIRATORY SELECTION PROCEDURE

1. Selection of respirators shall be made according to the specific hazard(s) involved per OSHA 29 CFR 1910.1000 and will be selected in accordance with the manufacturer's instructions or other related requirements (OSHA, ANSI, or NIOSH standards, etc.).
2. Air quality. Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity.
3. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen.

4. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966.
5. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air.
6. Oxygen must never be used with airline respirators. Breathing air may be supplied to respirators from cylinders or air compressors. Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 178).
7. Supplied Air. Compressors purchased by Facilities for supplying air shall be equipped with the necessary safety and standby devices. A breathing-air type compressor shall be used. The type compressor used shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is installed in the system, the air from the compressor shall be frequently tested for carbon monoxide (CO) to ensure that levels are below the exposure limit for CO.
8. Air line couplings used shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with non-respirable gases or oxygen.
9. Breathing gas containers shall be properly marked and stored in accordance with 29 CFR 1910.101.

CONDITIONS FOR USE OF RESPIRATORS

1. There are five conditions under which respirators must be used:
   a. In regulated areas within the facility.
   b. In emergencies.
   c. Where engineering and work practice controls are inadequate.
   d. Where exposures exceed permissible limits, and;
   e. During maintenance and repair activities during brief or intermittent operations where engineering and work practice controls are not feasible or required.
2. This document specifies standard procedures for respirator use. These procedures include all information and guidance necessary for the proper selection, use, and care of respirators. Where possible emergency and routine uses of respirators shall be anticipated and planned for.
3. The correct respirator shall be specified for each job. The individual issuing them shall be adequately instructed to ensure that the correct respirator is issued.
4. Dangerous atmospheres. Written procedures/checklists for specific routine tasks/jobs shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Staff shall be made familiar with these procedures and the available respirators (i.e., Confined Space Procedure).

5. In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional person shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency. (i.e., Confined Space Procedure).
6. When a self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health (IDLH), standby Staff must be present with suitable rescue equipment.
7. Staff using airline respirators in atmospheres immediately hazardous to life or health (IDLH) shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. Standby Staff with suitable self-contained breathing apparatus (SCBA) shall be at the nearest fresh air base for emergency rescue.

INTERNAL CONTROLS

1. Effective implementation of this program requires support from all levels of management within this department. This written program shall be communicated by the respective supervisors to all Staff that are affected by it. It encompasses the total workplace, regardless of number of workers employed or the number of work shifts. It is designed to establish clear goals, and objectives.
2. Engineering controls are required to control and or minimize the threat of occupational diseases caused by breathing air contaminated with harmful dust, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective of this program shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials).

REVIEW

Facilities will review and evaluate this procedure governing the selection and use of respirators on an annual basis, or when changes occur to 29 CFR 1910.134, that prompt revision of this document, or when facility operational changes occur that require a revision of this document.

TRAINING

1. For safe use of any respirator, it is essential that our Staff designated for these duties be properly instructed in its selection, use, and maintenance. Both supervisors and Staff shall be so instructed. Training shall be provided by a qualified instructor, or a qualified representative of a respirator manufacturer) and shall provide Staff the opportunity to handle the respirator, have it fitted properly, test its face-piece seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.
2. Fit instructions: Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the face-piece, or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of

a face-piece.

3. Fit Evaluation: Periodic checks of Staff while wearing respirators will be accomplished by the supervisor to ensure proper protection. This will be done in accordance with the manufacturer's face-piece fitting instructions.
4. Hair/Apparel: If hair growth or apparel interferes with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the Staff must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.
5. Corrective vision requirements (full-face respirators): Full-face respirators having provisions for optical inserts will be reviewed for use this company. These inserts when used will be used according to the manufacturer’s specification. When Staff must wear optical inserts as part of the face-piece, the face-piece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal. Facilities will provide corrective lenses for respirators based on optometry recommendations from an optometrist.
6. Conventional eyeglasses: Conventional eyeglasses will not be used with full-face respirators. A proper seal cannot be established if the temple bars of eyeglasses extend through the sealing edge of the full face-piece.
7. Contact lenses: Contact lenses will not be used with full-face respirators. The wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed.
8. If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the face-piece. Proper selection of equipment will minimize or avoid this problem.
9. Training shall be provided to each affected Staff:
    a. Before the Staff is first assigned duties that require respiratory protection.
    b. Before there is a change in assigned duties.
    c. Whenever there is a change in operations that presents a hazard for which a Staff has not previously been trained.
    d. Whenever Facilities has reason to believe that there are deviations from established respiratory procedures required by this instruction or inadequacies in the Staff's knowledge or use of these procedures.
10. The training will address Staff proficiency in the duties required by this procedure and shall introduce new or revised procedures, as necessary, for compliance with this procedure or when future revisions occur.
11. Facilities shall certify that the training required by this section has been accomplished. The certification shall contain each Staff's name, the signatures or initials of the trainer(s), and the dates of training. The certification shall be available for inspection by Staff and their authorized representatives. The original of this signed documentation shall be forwarded to the Administrative Assistant.
12. Training required before using Disposable Dust Masks:
    a. A medical Questionnaire must be completed by the Staff prior to use of a disposable mask. The questionnaire must be reviewed by a Medical Professional before the wearing of a mask can be approved and a mask issued. If it is the opinion of the Medical Professional that the wearing of a

mask may aggravate a pre-existing medical condition, the Staff will be sent for a Pulmonary Function Test at Facilities cost.

b. Disposable masks are simple filtering devices. The masks are made of fibers that trap particles as you breathe in through the filter. At the same time, the mask allows clean air to pass through the fibers so you can continue to breathe normally and easily.

c. These masks DO NOT protect against temperature extremes or if there is not enough oxygen.

d. These masks are only approved for use by Facilities Staff to provide comfort in jobs such as sweeping ceramic or clay dust, cleaning up after a dry fire extinguisher has been discharged or working in other blowing dust/dirt.

e. Fitting and use of Disposable Masks. Place the mask on your face with the strap behind your head. Pinch the metal nose clip to mold the mask to your face and ensure a snug fit. The shape of your face, facial hair, dentures, or skin condition can all prevent a snug fit.

f. Care of Disposable Masks. Disposable masks are designed to be thrown away after you use them. Dispose of your mask if it becomes clogged and makes breathing difficult. Request a new mask from your supervisor.

g. Disposable Masks may only be obtained from the storeroom with the approval of your supervisor.

INSPECTION, MAINTENANCE, AND CARE OF RESPIRATORY EQUIPMENT

1. Equipment shall be properly maintained to retain its original state of effectiveness. Failure to properly maintain equipment will be part of performance reviews.
2. Respirator inspection shall include but is not limited to the following:
   a. A check of the tightness of connections.
   b. Condition of the face-piece, headbands, valves, connecting tube, and canisters.
   c. Inspection of the Rubber or elastomer parts for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.
3. Specific procedures for disassembly, cleaning and maintenance of respirators used by this company will be done according to the manufacturers written instructions.
   a. Random inspections. Respiratory protection is no better than the respirator in use, even though it may be worn conscientiously. Frequent random inspections shall be conducted to ensure that respirators are properly selected, used, cleaned, and maintained. The respirator manufacturer's inspection criteria will be used as the basis for the inspections.
4. Inspection records shall be maintained in the Executive Director's Office.
5. Records of original and replacement equipment issued are to include issue date, name of Staff issued to, name of person who issued the equipment, and the reason for issuance.
6. Emergency Use Respirators: All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for

emergency use shall be inspected after each use and at least monthly to ensure that it is in satisfactory working condition. The respirator manufacturer's inspection criteria will be used as the basis for the inspections. A record shall be kept of inspection dates and findings for respirators maintained for emergency use. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

7. Routine Use Respirators: All routine use respirators shall be inspected routinely before and after each use. The respirator manufacturer's inspection criteria will be used as the basis for the inspection. Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to ensure that proper protection is provided for the wearer.
8. SCBA Inspections: Self-contained breathing apparatus (SCBA) shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.
9. Replacement or Repairs: Replacement or repairs shall be done only by trained Staff with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.
10. Storage Requirements: After inspection, cleaning, and necessary repair, respiratory protection equipment shall be carefully stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators should be packed or stored so that the face-piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.
11. Emergency use respirators: Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and will be stored in compartments built for the purpose. The compartments will be clearly marked. Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.
12. Routine use respirators: Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators having removable cartridges with imbedded compounds that could evaporate into a sealed bag should be removed so as not to permeate into the rubber parts of the respirator. Respirators should not be stored in such places as lockers or toolboxes unless they are in carrying cases or cartons.
13. Identification of chemical cartridges: The primary means of identifying a chemical cartridge is by means of labels. The secondary means is by a color code. All cartridges purchased or used by this company will be properly labeled and or colored coded in accordance with 29 CFR 1910.134 before they are placed in service. The labels and colors will be properly maintained at all times until disposal. Cartridges having labels and colors not identifiable will be properly disposed of. To determine the type cartridge:
    a. Type of canister. Canister used for *"X"* contaminant or Type N Gas Mask Canister.
    b. "For respiratory protection in atmospheres containing not more than *"X"* percent by volume of *"X"* (Name of atmospheric contaminant).

14. Radionuclides: Canisters having a special high efficiency filter for protection against radionuclides and other highly toxic particulates will have a label with a statement of the type and degree of protection afforded by the filter. The label will be affixed to the neck end of, or to the gray stripe, which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3 micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.
15. Oxygen warning: Staff must be fully aware of the label warning that states that cartridge respirators should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since cartridges are only designed to neutralize or remove contaminants from the air.
16. Color coding: Each cartridge is painted a distinctive color or combination of colors. All colors used are of such a color that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating offers a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use.

RESPIRATOR DECISION LOGIC

1. Where a specific OSHA standard exists, each task/job having the potential for respiratory hazards will be evaluated to determine worker protection requirement. The specific OSHA standard will be consulted to determine delineated respiratory requirements. The standards are listed in 29 CFR 1910.1000-1101.
2. Where a specific OSHA standard does not exist, the NIOSH respirator decision logic table from the "NIOSH guide to Industrial Respiratory Protection", Publication No. 87-116 (or subsequent versions) will be used. After all criteria have been identified and evaluated and after the requirements and restrictions of the respiratory protection program have been met, the class of respirators that should provide adequate respiratory protection will be determined.

RESPIRATOR FIT TESTING

1. Facilities shall ensure that the respirator issued to the Staff exhibits the least possible face-piece leakage and that the respirator is fitted properly. For each Staff wearing negative pressure respirators, Facilities shall perform either quantitative or qualitative face fit tests at the time of initial fitting and at least every six months thereafter. The qualitative fit tests may be used only for testing the fit of half mask respirators.
2. Half-mask respirators. Facilities shall perform (or have performed) qualitative fit test protocols in accordance with the specific standard listed in the "Z" tables to 29 CFR 1910.1000-1101. Where a specific OSHA standard protocol does not exist, the "NIOSH guide to Industrial Respiratory Protection", Publication No. 87-116 (or subsequent versions) will be used.
3. Minimum fit factor. Staff shall not be permitted to wear a half mask or full face-piece mask if a minimum fit factor of 100 or 1,000, respectively, cannot be obtained.
4. Hair. Fit testing shall not be conducted if there is any hair growth between the skin and the face-piece sealing surface.
5. Respiratory difficulty during tests. If Staff exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

6. Respirator use determination. The test subject shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the test subject may request another fit test which shall be performed immediately.
7. Respirator fit factor card. A respirator fit factor card shall be issued to the test subject with the following information, as a minimum:
    a. Name.
    b. Date of fit test.
    c. Protection factors obtained through each manufacturer, model and approval number of respirators tested.
    d. Name and signature of the person that conducted the test.
8. Filter replacement. Filters used for qualitative or quantitative fit testing shall be replaced weekly, whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media. Organic vapor cartridges/canisters shall be replaced daily or sooner if there is any indication of breakthrough by the test agent.
9. Quantitative fit test, Re-test requirements. Because the sealing of the respirator may be affected, quantitative fit testing shall be repeated immediately when the test subject has a:
    a. Weight change of 20 pounds or more.
    b. Significant facial scarring in the area of the face-piece seal.
    c. Significant dental changes, i.e., multiple extractions without prosthesis, or acquiring dentures.
    d. Reconstructive or cosmetic surgery.
    e. Any other condition that may interfere with face-piece sealing.
10. Fit test Record-keeping requirements. A summary of all test results shall be maintained for three (3) years. The summary shall as minimum include: A copy of this summary shall be forwarded to the Administrative Assistant.
    a. Name of test subject.
    b. Date of testing.
    c. Name of the test conductor. Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).

PURPOSE

Facilities will ensure that environmental hazards within our facilities are evaluated, and that information concerning these hazards is transmitted to all Staff. This procedure is intended to address comprehensively the following issues; evaluating the potential respiratory hazards, communicating information concerning these hazards, establishing appropriate engineering, and work practice for Staff.

DEFINITIONS

Ozone Depletion Definitions

Aerosol: a product that relies on a pressurized gas to propel substances out of a container. Consumer aerosol products in the US have not used ozone-depleting substances (ODS) since the late 1970s because of voluntary switching followed by federal regulation. The Clean Air Act and EPA regulations further restricted the use of ODS for non-consumer products. All consumer products, and most other aerosol products, now use propellants that do not deplete the ozone layer, such as hydrocarbons and compressed gases.

Carbon Tetrachloride (CCl4): a compound consisting of one carbon atom and four chlorine atoms. Carbon tetrachloride was widely used as a raw material in many industrial uses, including the production of CFCs, and as a solvent. Solvent use ended when it was discovered to be carcinogenic. It is also used as a catalyst to deliver chlorine ions to certain processes. Its ozone depletion potential is 1.2.

Chlorofluorocarbon (CFC): a compound consisting of chlorine, fluorine, and carbon. CFCs are very stable in the troposphere. They are broken down by strong ultraviolet light in the stratosphere and release chlorine atoms that then deplete the ozone layer. CFCs are commonly used as refrigerants, solvents, and foam blowing agents. The most common CFCs are CFC-11, CFC-12, CFC-113, CFC-114, and CFC-115. The ozone depletion potential (ODP) for each CFC is, respectively, 1, 1, 0.8, 1, and 0.6. A table of all ozone-depleting substances shows their ODPs, GWPs, and CAS numbers. CFCs are numbered according to a standard scheme. The National Oceanic and Atmospheric Administration provides more detailed information about CFCs on their web site (including graphs of their abundance in the atmosphere).

Class I Substance: one of several groups of chemicals with an ozone-depletion potential of 0.2 or higher. Class I substances listed in the CAA include CFCs, halons, carbon tetrachloride, and methyl chloroform. EPA later added HBFCs and methyl bromide to the list by regulation. A table of class I substances shows their ODPs, GWPs, and CAS numbers.

Class II Substance: a chemical with an ozone-depletion potential of less than 0.2. Currently, all of the HCFCs are class II substances. Lists of class II substances with their ODPs, GWPs, and CAS numbers are available.

Clean Air Act (CAA): law amended by Congress in 1990. Title VI of the CAA directs EPA to protect the ozone layer through several regulatory and voluntary programs. Sections within Title VI cover production of ozone-depleting substances (ODS), the recycling and handling of ODS, the evaluation of substitutes, and efforts to educate the public.

Column Ozone: ozone between the Earth's surface and outer space. Ozone levels can be described in several ways. One of the most common measures is how much ozone is in a vertical column of air. The Dobson unit is a measure of column ozone. Other measures include partial pressure, number density, and concentration of ozone, and can represent either column ozone or the amount of ozone at a particular altitude.

Dobson Unit (DU): a measurement of column ozone levels. If 100 DU of ozone were brought to the Earth's surface, it would form a layer 1 millimeter thick. In the tropics, ozone levels are typically between 250 and 300 DU year-round. In temperate regions, seasonal variations can produce large swings in ozone levels. For instance, measurements in Leningrad have recorded ozone levels as high as 475 DU and as low as 300 DU. These variations occur even in the absence of ozone depletion, but they are well understood. Ozone depletion refers to reductions in ozone below normal levels after accounting for seasonal cycles and other natural effects. For a graphical explanation, see NASA's TOMS site.

Federal Register (FR): the daily publication containing all federal government actions. The Federal Register is the formal method of communication for any Notice, Notice of Proposed Rulemaking (NPRM), or Final Rulemaking (FRM) issued by the US government. Once published in the FR, rules are collected in the Code of Federal Regulations. The FR is available at many libraries. FR cites are similar in form to 11 FR 12345, where 11 is a number corresponding to the year (e.g., 62 is 1997) and 12345 represents the page number (pages are numbered continuously through the year; the first page published in each year is page number 1). Thus, a Notice whose cite is 62 FR 10700 was published beginning at page 10700 in 1997. It is usually helpful to obtain the date as well, since it is difficult to guess the date solely on the page number.

Global Warming Potential: a number that refers to the amount of global warming caused by a substance. The GWP is the ratio of the warming caused by a substance to the warming caused by a similar mass of carbon dioxide. Thus, the GWP of CO2 is defined to be 1.0 . CFC-12 has a GWP of 8,500, while CFC-11 has a GWP of 5,000. Various HCFCs and HFCs have GWPs ranging from 93 to 12,100. Water, a substitute in numerous end-uses, has a GWP of 0. A table of all ozone-depleting substances shows their ODPs, GWPs, and CAS numbers, and another table shows the GWPs for many non-ozone-depleting substances.

Halon: a compound consisting of bromine, fluorine, and carbon. The halons are used as fire extinguishing agents, both in built-in systems and in handheld portable fire extinguishers. Halon production in the U.S. ended on 12/31/93 because they contribute to ozone depletion. They cause ozone depletion because they contain bromine. Bromine is many times more effective at destroying ozone than chlorine. At the time the current U.S. tax code was adopted, the ozone depletion potentials of halon 1301 and halon 1211 were observed to be 10 and 3, respectively. These values are used for tax calculations. Recent scientific studies, however, indicate that the ODPs are at least 13 and 4, respectively. Note: technically, all compounds containing carbon and fluorine and/or chlorine are halons, but in the context of the Clean Air Act, "halon" means a fire extinguishing agent as described above. A table of class I substances shows their ODPs, GWPs, and CAS numbers. Halons are numbered according to a standard scheme. The National Oceanic and Atmospheric Administration provides more detailed information about HCFCs on their web site.

Hydrobromofluorocarbon (HBFC): a compound consisting of hydrogen, bromine, fluorine, and carbon. Although they were not originally regulated under the Clean Air Act, subsequent regulation added HBFCs to the list of class I substances. A table of class I substances shows their ODPs, GWPs, and CAS numbers.

Hydrocarbon (HC): a compound consisting of carbon and hydrogen. Hydrocarbons include methane, ethane, propane, cyclopropane, butane, and cyclopentane. Although they are highly flammable, HCs may offer advantages as ODS substitutes because they are inexpensive to produce and they have zero ozone depletion potential, very low global warming potential (GWP), and low toxicity. HCs are numbered according to a standard scheme.

Hydrochlorofluorocarbon (HCFC): a compound consisting of hydrogen, chlorine, fluorine, and carbon. The HCFCs are one class of chemicals being used to replace the CFCs. They contain chlorine and thus deplete stratospheric ozone, but to a much lesser extent than CFCs. HCFCs have ozone depletion potentials (ODPs) ranging from 0.01 to 0.1. Production of HCFCs with the highest ODPs will be phased out first, followed by other HCFCs. A table of ozone-depleting substances shows their ODPs, GWPs, and CAS numbers. HCFCs are numbered according to a standard scheme. The National Oceanic and Atmospheric Administration provides more detailed information about HCFCs on their web site.

Hydrofluorocarbon (HFC): a compound consisting of hydrogen, fluorine, and carbon. The HFCs are a class of replacements for CFCs. Because they do not contain chlorine or bromine, they do not deplete the ozone layer. All HFCs have an ozone depletion potential of 0. Some HFCs have high GWPs. HFCs are numbered according to a standard scheme. The National Oceanic and Atmospheric Administration provides more detailed information about HFCs on their web site.

Methyl Bromide (CH3Br): a compound consisting of carbon, hydrogen, and bromine. Methyl Bromide's chemical formula is CH3BR. An effective pesticide, this compound is used to fumigate soil and many agricultural products. Because it contains bromine, it depletes stratospheric ozone and has an ozone depletion potential of 0.6. Production of methyl bromide will end in the U.S. on 12/31/2000. Much more information is available. Methyl Chloroform (CH3CCl3): a compound consisting of carbon, hydrogen, and chlorine. Methyl chloroform is used as an industrial solvent. Its ozone depletion potential is 0.11.

Montreal Protocol: the international treaty governing the protection of stratospheric ozone. The Montreal Protocol on Substances That Deplete the Ozone Layer and its amendments control the phaseout of ODS production and use. Under the MP, several international organizations report on the science of ozone depletion, implement projects to help move away from ODS, and provide a forum for Procedure discussions. In addition, the Multilateral Fund provides resources to developing nations to promote the transition to ozone-safe technologies. The full text of the MP is available online and it is part of the OzonAction Information Clearinghouse database.

Nanometer: a distance of one billionth of a meter. The nanometer, or nm, is a common unit used to describe wavelengths of light or other electromagnetic radiation such as UV. For example, green light has wavelengths of about 500-550 nm, while violet light has wavelengths of about 400-450 nm. One billionth is a tiny number. One foot is about one billionth the distance of 48 roundtrips between Los Angeles and Washington, DC.

Ozone: a gas composed of three atoms of oxygen. Ozone is a bluish gas that is harmful to breathe. Nearly 90% of the Earth's ozone is in the stratosphere and is referred to as the ozone layer. Ozone absorbs a band of ultraviolet radiation called UVB that is particularly harmful to living organisms. The ozone layer prevents most UVB from reaching the ground.

Ozone-Depleting Substance(s) (ODS): a compound that contributes to stratospheric ozone depletion. ODS include CFCs, HCFCs, halons, methyl bromide, carbon

tetrachloride, and methyl chloroform. ODS are generally very stable in the troposphere and only degrade under intense ultraviolet light in the stratosphere. When they break down, they release chlorine or bromine atoms, which then deplete ozone. A detailed list of class I and class II substances with their ODPs, GWPs, and CAS numbers are available.

Ozone Depletion: Chemical destruction of the stratospheric ozone layer beyond natural reactions. Stratospheric ozone is constantly being created and destroyed through natural cycles. Various ozone-depleting substances (ODS), however, accelerate the destruction processes, resulting in lower than normal ozone levels. The science page offers much more detail on the science of ozone depletion.

Ozone Depletion Potential (ODP): a number that refers to the amount of ozone depletion caused by a substance. The ODP is the ratio of the impact on ozone of a chemical compared to the impact of a similar mass of CFC-11. Thus, the ODP of CFC-11 is defined to be 1.0. Other CFCs and HCFCs have ODPs that range from 0.01 to 1.0. The halons have ODPs ranging up to 10. Carbon tetrachloride has an ODP of 1.2, and methyl chloroform's ODP is 0.11. HFCs have zero ODP because they do not contain chlorine. A table of all ozone-depleting substances shows their ODPs, GWPs, and CAS numbers,

Ozone layer: the region of the stratosphere containing the bulk of atmospheric ozone. The ozone layer lies approximately 15-40 kilometers (10-25 miles) above the Earth's surface, in the stratosphere. Depletion of this layer by ODS will lead to higher UVB levels, which in turn will cause increased skin cancers and cataracts and potential damage to some marine organisms, plants, and plastics. The science page offers much more detail on the science of ozone depletion.

Perfluorocarbon (PFC): a compound consisting of carbon and fluorine. PFCs have extremely high global warming potentials (GWPs) and very long lifetimes. They do not deplete stratospheric ozone, but EPA is concerned about their impact on global warming.

Stratosphere: the region of the atmosphere above the troposphere. The stratosphere extends from about 10km to about 50km in altitude. Commercial airlines fly in the lower stratosphere. The stratosphere gets warmer at higher altitudes. In fact, this warming is caused by ozone absorbing ultraviolet radiation. Warm air remains in the upper stratosphere, and cool air remains lower, so there is much less vertical mixing in this region than in the troposphere.

Troposphere: the region of the atmosphere closest to the Earth. The troposphere extends from the surface up to about 10 km in altitude, although this height varies with latitude. Almost all weather takes place in the troposphere. Mt. Everest, the highest mountain on Earth, is only 8.8 km high. Temperatures decrease with altitude in the troposphere. As warm air rises, it cools, falling back to Earth. This process, known as convection, means there are huge air movements that mix the troposphere very efficiently.

UV: ultraviolet radiation. Ultraviolet radiation is a portion of the electromagnetic spectrum with wavelengths shorter than visible light. The sun produces UV, which is commonly split into three bands: UVA, UVB, and UVC. UVA is not absorbed by ozone. UVB is mostly absorbed by ozone, although some reaches the Earth. UVC is completely absorbed by ozone and normal oxygen. NASA provides more information on their web site.

UVA: a band of ultraviolet radiation with wavelengths from 320-400 nanometers produced by the Sun. UVA is not absorbed by ozone. This band of radiation has

wavelengths just shorter than visible violet light. NASA provides more information on their web site.

UVB: a band of ultraviolet radiation with wavelengths from 280-320 nanometers produced by the Sun. UVB is a kind of ultraviolet light from the sun (and sun lamps) that has several harmful effects, particularly effective at damaging DNA. It is a cause of melanoma and other types of skin cancer. It has also been linked to damage to some materials, crops, and marine organisms. The ozone layer protects the Earth against most UVB coming from the sun. It is always important to protect oneself against UVB, even in the absence of ozone depletion, by wearing hats, sunglasses, and sunscreen. However, these precautions will become more important as ozone depletion worsens. NASA provides more information on their web site.

UVC: a band of ultraviolet radiation with wavelengths shorter than 280 nanometers. UVC is extremely dangerous, but it is completely absorbed by ozone and normal oxygen (O2). NASA provides more information on their website.

Refrigerant Definitions

Appliance - Any device which contains and uses a class I (CFC) or class II (HCFC) substance as a refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer. EPA interprets this definition to include all air-conditioning and refrigeration equipment except that designed and used exclusively for military purposes.

Apprentice Any person who is currently registered as an apprentice in service, maintenance, repair, or disposal of appliances with the U.S. Department of Labor's Bureau of Apprenticeship and Training (or a State Apprenticeship Council recognized by the Bureau of Apprenticeship and Training).

Major Maintenance, Service, or Repair - Maintenance, service, or repair that involves removal of the appliance compressor, condenser, evaporator, or auxiliary heat exchanger coil.

MVAC-like appliance - Mechanical vapor compression, open-drive compressor appliances used to cool the driver's or passenger's compartment of a non-road vehicle, including agricultural and construction vehicles. This definition excludes appliances using HCFC-22.

Opening - Any service, maintenance, or repair on an appliance that would release class I or class II refrigerant from the appliance to the atmosphere unless the refrigerant were recovered previously from the appliance. Connecting and disconnecting hoses and gauges to and from the appliance to measure pressures within the appliance and to add refrigerant to or recover refrigerant from the appliance shall not be considered "opening."

Reclaim - To reprocess refrigerant to at least the purity specified in the ARI Standard 700-1993, Specifications for Fluorocarbon Refrigerants, and to verify this purity using the analytical methodology prescribed in the Standard. Reclamation requires specialized machinery not available at a particular job site or auto repair shop. The technician will recover the refrigerant and then send it either to a general reclaimer or back to the refrigerant manufacturer.

Recover - To remove refrigerant in any condition from an appliance and store it in an external container without necessarily testing or processing it in any way.

Recycle - To extract refrigerant from an appliance and clean refrigerant for reuse without meeting all of the requirements for reclamation. In general, recycled refrigerant is a refrigerant that is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce

moisture, acidity, and particulate matter. Under section 609, refrigerant can be removed from one car's air conditioner, recycled on site, and then charged into a different car.

Refrigerant circuit - The parts of an appliance that are normally connected to each other (or are separated only by internal valves) and are designed to contain refrigerant.

Small appliance - Any of the following products that are fully manufactured, charged, and hermetically sealed in a factory with five pounds or less of refrigerant: refrigerators and freezers designed for home use, room air conditioners (including window air conditioners and packaged terminal air conditioners), packaged terminal heat pumps, dehumidifiers, under-the-counter ice makers, vending machines, and drinking water coolers.

Technician - Any person who performs maintenance, service, or repair that could reasonably be expected to release class I (CFC) or class II (HCFC) substances from appliances, except for MVACs, into the atmosphere. Technician also means any person performing disposal of appliances, except for small appliances, MVACs, and MVAC-like appliances, that could be reasonably expected to release class I or class II refrigerants from appliances into the atmosphere.

RESPONSIBILITIES

1. The Executive Director has the overall responsibility for the administration of this procedure.
2. Supervisors and Managers are responsible for ensuring that all aspects of this Procedure are adhered to. Training will be documented and provided to the Administrative Assistant.
3. Staff is responsible for complying with all aspects of this Procedure and to immediately report any deficiencies to their respective supervisor.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director
Effective: 10/01/2026
Supersedes any previous

ENVIRONMENTAL PROTECTION PROCEDURES

Refrigerant Leak

This fact sheet is a brief overview of the of the leak repair requirements for appliances containing class I or class II refrigerants (e.g., CFCs, HCFCs, or blends). Many other aspects of the requirements, particularly information on recordkeeping and reporting, are discussed in the general section 608 rule summary. The U.S. Environmental Protection Agency (EPA) and the Chemical Manufacturer's Association (CMA) have developed a guidance document entitled Compliance Guidance For Industrial Process Refrigeration Leak Repair Regulations Under Section 608 of the Clean Air Act that provides far greater detail than this overview. The guidance document is intended for those persons who are responsible for complying with the requirements. The guidance should not be used to replace the actual regulations published in the Federal Register on August 8, 1995 (60 FR 40420); however, it can act as a supplement to explain the requirements. Reliance on this fact sheet alone will likely not result in compliance.

INTRODUCTION

The leak repair requirements, promulgated under Section 608 of the Clean Air Act Amendments of 1990, require that when an owner or operator of an appliance that normally contains a refrigerant charge of more than 50 pounds discovers that refrigerant is leaking at a rate that would exceed the applicable trigger rate during a 12-month period, the owner or operator must take corrective action.

Trigger Rates

1. For all appliances that have a refrigerant charge of more than 50 pounds, the following leak rates for a 12-month period are applicable:

commercial refrigeration	35%
industrial process refrigeration	35%
comfort cooling	15%
all other appliances	15%

2. In general, owners or operators must either repair leaks within thirty days from the date the leak was discovered or develop a dated retrofit/retirement plan within thirty days and complete actions under that plan within one year from the plan's date. However, for industrial process refrigeration equipment and some federally owned chillers, additional time may be available.
3. Industrial process refrigeration is defined as complex customized appliances used in the chemical, pharmaceutical, petrochemical, and manufacturing industries. These appliances are directly linked to the industrial process. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. If at least 50 percent of an appliance‘s capacity is used in an industrial process refrigeration application, the appliance is considered industrial process refrigeration equipment and the trigger rate is 35 percent.
4. Industrial process refrigeration equipment and federally owned chillers must conduct initial and follow-up verification tests at the conclusion of any repair efforts. These tests are essential to ensure that the repairs have been

successful. In cases where an industrial process shutdown is required, a repair period of 120 days is substituted for the normal 30-day repair period. Any appliance that requires additional time may be subject to recordkeeping/reporting requirements.

WHEN ADDITIONAL TIME IS NECESSARY

Additional time is permitted for conducting leak repairs where the necessary repair parts are unavailable or if other applicable federal, state, or local regulations make a repair within 30/120 days impossible. If owners or operators choose to retrofit or retire appliances, a retrofit or retirement plan must be developed within 30 days of detecting a leak rate that exceeds the trigger rates. A copy of the plan must be kept on site. The original plan must be made available to EPA upon request. Activities under the plan must be completed within 12 months (from the date of the plan). If a request is made within 6 months from the expiration of the initial 30-day period, additional time beyond the 12-month period is available for owners or operators of industrial process refrigeration equipment and federally-owned chillers in the following cases: EPA will permit additional time to the extent reasonably necessary where a delay is caused by the requirements of other applicable federal, state, or local regulations; or where a suitable replacement refrigerant, in accordance with the regulations promulgated under Section 612, is not available; and EPA will permit one additional 12-month period where an appliance is custom-built and the supplier of the appliance or a critical component has quoted a delivery time of more than 30 weeks from when the order was placed, (assuming the order was placed in a timely manner). In some cases, EPA may provide additional time beyond this extra year where a request is made by the end of the 9th month of the extra year.

RELIEF FROM RETROFIT/RETIREMENT

1. The owners or operators of industrial process refrigeration equipment or federally owned chillers may be relieved from the retrofit or repair requirements if:
   a. second efforts to repair the same leaks that were subject to the first repair efforts are successful; or
   b. within 180 days of the failed follow-up verification test, the owners or operators determine the leak rate is below 35 percent. In this case, the owners or operators must notify EPA as to how this determination will be made and must submit the information within 30 days of the failed verification test.

SYSTEM MOTHBALLING

For all appliances subject to the leak repair requirements, the timelines may be suspended if the appliance has undergone system mothballing. System mothballing means the intentional shutting down of a refrigeration appliance undertaken for an extended period of time where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance to at least atmospheric pressure. However, the timelines pick up again as soon as the system is brought back on-line.

FOR MORE INFORMATION

For further information concerning stratospheric protection, copies of regulations, guidance documents, or fact sheets, please call the Stratospheric Protection Hotline at (800) 296-1996. The Hotline operates between 10:00 a.m. and 4:00 p.m. eastern time, Mondays thru Fridays except federal holidays.

Refrigerant Recycling

Overview

1. Under Section 608 of the CAA, EPA has established regulations that:
    a. Require service practices that maximize recycling of ozone-depleting compounds (both chlorofluorocarbons [CFCs] and hydrochlorofluorocarbons [HCFCs] and their blends) during the servicing and disposal of air-conditioning and refrigeration equipment.
    b. Set certification requirements for recycling and recovery equipment, technicians, and reclaimers.
    c. Restrict the sale of refrigerant to certified technicians.
    d. Require persons servicing or disposing of air-conditioning and refrigeration equipment to certify to EPA that they have acquired recycling or recovery equipment and are complying with the requirements of the rule.
    e. Require the repair of substantial leaks in air-conditioning and refrigeration equipment with a charge of greater than 50 pounds.
    f. Establish safe disposal requirements to ensure removal of refrigerants from goods that enter the waste stream with the charge intact (e.g., motor vehicle air conditioners, home refrigerators, and room air conditioners).

The Prohibition on Venting

1. Effective July 1, 1992, Section 608 of the Act prohibits individuals from knowingly venting ozone-depleting compounds (generally CFCs and HCFCs) used as refrigerants into the atmosphere while maintaining, servicing, repairing, or disposing of air-conditioning or refrigeration equipment (appliances). Only four types of releases are permitted under the prohibition:
2. "De minimis" quantities of refrigerant released in the course of making good faith attempts to recapture and recycle or safely dispose of refrigerant.
3. Refrigerants emitted in the course of normal operation of air-conditioning and refrigeration equipment (as opposed to during the maintenance, servicing, repair, or disposal of this equipment) such as from mechanical purging and leaks. However, EPA requires the repair of leaks above a certain size in large equipment (see Refrigerant Leaks).
4. Releases of CFCs or HCFCs that are not used as refrigerants. For instance, mixtures of nitrogen and R-22 that are used as holding charges or as leak test gases may be released, because in these cases, the ozone-depleting compound is not used as a refrigerant. However, a technician may not avoid recovering refrigerant by adding nitrogen to a charged system; before nitrogen is added, the system must be evacuated to the appropriate level in Table 1. Otherwise, the CFC or HCFC vented along with the nitrogen will be considered a refrigerant. Similarly, pure CFCs or HCFCs released from appliances will be presumed to be refrigerants, and their release will be considered a violation of the prohibition on venting.
5. Small releases of refrigerant that result from purging hoses or from connecting or disconnecting hoses to charge or service appliances will not be considered violations of the prohibition on venting. However, recovery and recycling equipment manufactured after November 15, 1993, must be equipped with low-loss fittings.

Regulatory Requirements

1. Since July 13, 1993, technicians have been required to evacuate air-conditioning and refrigeration equipment to established vacuum levels when opening the equipment. If the technician's recovery or recycling equipment was manufactured any time before November 15, 1993, the air-conditioning and refrigeration equipment must be evacuated to the levels described in the first column of Table 1. If the technician's recovery or recycling equipment was manufactured on or after November 15, 1993, the air-conditioning and refrigeration equipment must be evacuated to the levels described in the second column of Table 1, and the recovery or recycling equipment must have been certified by an EPA-approved equipment testing organization. Persons who simply add refrigerant to (top-off) appliances are not required to evacuate the systems. Technicians repairing small appliances, such as household refrigerators, window air conditioners, and water coolers, must recover:
    a. 80 percent of the refrigerant when the technician uses recovery, or
    b. recycling equipment manufactured before November 15, 1993, or
    c. the compressor in the appliance is not operating, or
    d. 90 percent of the refrigerant when the technician uses recovery, or
    e. recycling equipment manufactured after November 15, and
    f. the compressor in the appliance is operating
2. In order to ensure that they are recovering the correct percentage of refrigerant, technicians must use the recovery equipment according to the directions of its manufacturer. Technicians may also satisfy recovery requirements by evacuating the small appliance to four inches of mercury vacuum.

Exceptions to Evacuation Requirements

1. EPA has established limited exceptions to its evacuation requirements for 1) repairs to leaky equipment and 2) repairs that are not major and that are not followed by an evacuation of the equipment to the environment.
2. If, due to leaks, evacuation to the levels in Table 1 is not attainable, or would substantially contaminate the refrigerant being recovered, persons opening the appliance must:
    a. isolate leaking from non-leaking components wherever possible.
    b. evacuate non-leaking components to the levels in Table 1; and
    c. evacuate leaking components to the lowest level that can be attained without substantially contaminating the refrigerant. This level cannot exceed 0 psig.
3. If evacuation of the equipment to the environment is not to be performed when repairs are complete, and if the repair is not major, then the appliance must:
    a. be evacuated to at least 0 psig before it is opened if it is a high- or very high-pressure appliance; or
    b. be pressurized to 0 psig before it is opened if it is a low-pressure appliance. Methods that require subsequent purging (e.g., nitrogen) cannot be used except with appliances containing R-113.

Reclamation Requirement

1. EPA has also established that refrigerant recovered and/or recycled can be returned to the same system or other systems owned by the same person without restriction. If refrigerant changes ownership, however, that refrigerant must be reclaimed (i.e., cleaned to the ARI 700-1993 standard of purity and chemically analyzed to verify that it meets this standard) unless the refrigerant was used only in a motor vehicle air conditioner (MVAC) or MVAC-like appliance and will be used in the same type of appliance. (Refrigerant used in MVACs and MVAC-like appliances is subject to the purity requirements of the MVAC regulations at 40 CFR Part 82 Subpart B.) EPA updates the list of reclaimers as new companies are added.

Equipment Certification

1. The Agency has established a certification program for recovery and recycling equipment. Under the program, EPA requires that equipment manufactured on or after November 15, 1993, be tested by an EPA-approved testing organization to ensure that it meets EPA requirements. Recycling and recovery equipment intended for use with air-conditioning and refrigeration equipment besides small appliances must be tested under the ARI 740-1993 test protocol, which is included in the final rule as Appendix B. Recovery equipment intended for use with small appliances must be tested under either the ARI 740-1993 protocol or Appendix C of the final rule.
2. The Agency requires recovery efficiency standards that vary depending on the size and type of air-conditioning or refrigeration equipment being serviced. For recovery and recycling equipment intended for use with air-conditioning and refrigeration equipment besides small appliances, these standards are the same as those in the second column of Table 1. Recovery equipment intended for use with small appliances must be able to recover 90 percent of the refrigerant in the small appliance when the small appliance compressor is operating and 80 percent of the refrigerant in the small appliance when the compressor is not operating.
3. EPA has approved both the Air-Conditioning and Refrigeration Institute (ARI) and Underwriters Laboratories (UL) to certify recycling and recovery equipment. Certified equipment can be identified by a label reading: "This equipment has been certified by ARI/UL to meet EPA's minimum requirements for recycling and/ or recovery equipment intended for use with [appropriate category of appliance--e.g., small appliances, HCFC appliances containing less than 200 pounds of refrigerant, all high-pressure appliances, etc.]." Lists of certified equipment may be obtained by contacting ARI at 703-524-8800 and UL at 708-272-8800 ext. 42371.

Equipment Grandfathering

Equipment manufactured before November 15, 1993, including home-made equipment, may be grandfathered if it meets the standards in the first column of Table 1. Third-party testing is not required for equipment manufactured before November 15, 1993, but equipment manufactured on or after that date, including home-made equipment, must be tested by a third-party (Equipment Certification).

Refrigerant Leaks

1. Owners of equipment with charges of greater than 50 pounds are required to repair leaks in the equipment when those leaks together would result in the loss of more than a certain percentage of the equipment's charge over a year. For the commercial and industrial process refrigeration sectors, leaks must be repaired

when the appliance leaks at a rate that would release 35 percent or more of the charge over a year. For all other sectors, including comfort cooling, leaks must be repaired when the appliance leaks at a rate that would release 15 percent or more of the charge over a year.

2. The trigger for repair requirements is the current leak rate rather than the total quantity of refrigerant lost. For instance, owners of a commercial refrigeration system containing 100 pounds of charge must repair leaks if they find that the system has lost 10 pounds of charge over the past month; although 10 pounds represents only 10 percent of the system charge in this case, a leak rate of 10 pounds per month would result in the release of over 100 percent of the charge over the year. To track leak rates, owners of air-conditioning and refrigeration equipment with more than 50 pounds of charge must keep records of the quantity of refrigerant added to their equipment during servicing and maintenance procedures.
3. Owners are required to repair leaks within 30 days of discovery. This requirement is waived if, within 30 days of discovery, owners develop a one-year retrofit or retirement plan for the leaking equipment. Owners of industrial process refrigeration equipment may qualify for additional time under certain circumstances. For example, if an industrial process shutdown is required to repair a leak, owners have 120 days to repair the leak. Owners of leaky industrial process refrigeration equipment should see the Compliance Assistance Guidance Document for Leak Repair (available from the hotline) for additional information concerning time extensions and pertinent recordkeeping and reporting requirements. EPA anticipates putting this document on the website but does not have an estimated date for when that will happen.

Technician Certification

1. EPA has established a technician certification program for persons ("technicians") who perform maintenance, service, repair, or disposal that could be reasonably expected to release refrigerants into the atmosphere. The definition of "technician" specifically includes and excludes certain activities as follows:
   a. Included:
      i. attaching and detaching hoses and gauges to and from the appliance to measure pressure within the appliance;
      ii. adding refrigerant to or removing refrigerant from the appliance
      iii. any other activity that violates the integrity of the refrigerant circuit while there is refrigerant in the appliance.
   b. Excluded:
      i. activities that are not reasonably expected to violate the integrity of the refrigerant circuit, such as painting the appliance, re-wiring an external electrical circuit, replacing insulation on a length of pipe, or tightening nuts and bolts on the appliance;
      ii. maintenance, service, repair, or disposal of appliances that have already been evacuated in accordance with EPA requirements, unless the maintenance consists of adding refrigerant to the appliance;
      iii. servicing motor vehicle air conditioners (MVACs), which are subject to the certification requirements of the MVAC refrigerant recycling rule; and,
      iv. disposing of MVACs, MVAC-like appliances, and small appliances.

c. In addition, apprentices are exempt from certification requirements provided the apprentice is closely and continually supervised by a certified technician.

d. The Agency has developed four types of certifications:

   i. For servicing small appliances (Type I).

   ii. For servicing or disposing of high- or very high-pressure appliances, except small appliances and MVACs (Type II).

   iii. For servicing or disposing of low-pressure appliances (Type III)

   iv. For servicing all types of equipment (Universal).

e. Technicians are required to pass an EPA-approved test given by an EPA-approved certifying organization to become certified under the mandatory program. The Stratospheric Ozone Hotline distributes lists of approved testing organizations.

Refrigerant Sales Restrictions

1. Under Section 609 of the Clean Air Act, sales of CFC-12 in containers smaller than 20 pounds are restricted solely to technicians certified under EPA's motor vehicle air conditioning regulations. Persons servicing appliances other than motor vehicle air conditioners may still buy containers of CFC-12 larger than 20 pounds.

2. Effective November 14, 1994, the sale of refrigerant in any size container is restricted to technicians certified either under the program described in Technician Certification above or under EPA's motor vehicle air conditioning regulations. The sales restriction covers refrigerant contained in bulk containers (cylinders or drums) and pre-charged parts. The restriction excludes refrigerant contained in refrigerators or air conditioners with fully assembled refrigerant circuits (such as household refrigerators, window air conditioners, and packaged air conditioners), pure HFC refrigerants, and CFCs or HCFCs that are not intended for use as refrigerants. In addition, a restriction on sale of pre-charged split systems has been stayed (suspended) while EPA reconsiders this provision.

Note: More detailed information is available in an EPA fact sheet titled "The Refrigerant Sales Restriction."

Certification by Owners of Recycling and Recovery Equipment

1. EPA requires that persons servicing or disposing of air-conditioning and refrigeration equipment certify to the appropriate EPA Regional Administrative that they have acquired (built, bought, or leased) recovery or recycling equipment and that they are complying with the applicable requirements of this rule. This certification must be signed by the owner of the equipment or another responsible officer and sent to the appropriate EPA Regional Office. A sample form for this certification is attached. Although owners of recycling and recovery equipment are required to list the number of trucks based at their shops, they do not need to have a piece of recycling or recovery equipment for every truck. Owners do not have to send in a new form each time they add recycling or recovery equipment to their inventory.

Reclaimer Certification

1. Reclaimers are required to return refrigerant to the purity level specified in ARI Standard 700-1993 (an industry-set purity standard) and to verify this purity using the laboratory protocol set forth in the same standard. In addition, reclaimers must release no more than 1.5 percent of the refrigerant during the reclamation process and must dispose of wastes properly. Reclaimers must certify to the

Section 608 Recycling Program Manager at EPA headquarters that they are complying with these requirements and that the information given is true and correct. Certification must also include the name and address of the reclaimer and a list of equipment used to reprocess and to analyze the refrigerant.

2. EPA encourages reclaimers to participate in third-party reclaimer certification programs, such as that operated by the Air-Conditioning and Refrigeration Institute (ARI). Third-party certification can enhance the attractiveness of a reclaimer's product by providing an objective assessment of its purity. EPA maintains a list of approved reclaimers that is available from the hotline. In addition, a checklist helps prospective reclaimers provide appropriate information for EPA to review.

MVAC-like Appliances

1. Some of the air conditioners that are covered by this rule are identical to motor vehicle air conditioners (MVACs), but they are not covered by the MVAC refrigerant recycling rule (40 CFR Part 82, Subpart B) because they are used in vehicles that are not defined as "motor vehicles." These air conditioners include many systems used in construction equipment, farm vehicles, boats, and airplanes. Like MVACs in cars and trucks, these air conditioners typically contain two or three pounds of CFC-12 and use open-drive compressors to cool the passenger compartments of vehicles. (Vehicle air conditioners utilizing HCFC-22 are not included in this group and are therefore subject to the requirements outlined above for HCFC-22 equipment.) EPA is defining these air conditioners as "MVAC-like appliances" and is applying the MVAC rule's requirements for the certification and use of recycling and recovery equipment to them. That is, technicians servicing MVAC-like appliances must "properly use" recycling or recovery equipment that has been certified to meet the standards in Appendix A to 40 CFR Part 82, Subpart B. In addition, EPA is allowing technicians who service MVAC-like appliances to be certified by a certification program approved under the MVAC rule, if they wish.

Note: More detailed information is presented in an EPA fact sheet titled "Servicing Farm and Heavy-Duty Equipment."

Safe Disposal Requirements

1. Under EPA's rule, equipment that is typically dismantled on-site before disposal (e.g., retail food refrigeration, central residential air conditioning, chillers, and industrial process refrigeration) has to have the refrigerant recovered in accordance with EPA's requirements for servicing. However, equipment that typically enters the waste stream with the charge intact (e.g., motor vehicle air conditioners, household refrigerators and freezers, and room air conditioners) is subject to special safe disposal requirements.

2. Under these requirements, the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) is responsible for ensuring that refrigerant is recovered from equipment before the final disposal of the equipment. However, persons "upstream" can remove the refrigerant and provide documentation of its removal to the final person if this is more cost-effective.

3. The equipment used to recover refrigerant from appliances prior to their final disposal must meet the same performance standards as equipment used prior to servicing, but it does not need to be tested by a laboratory. This means that self-built equipment is allowed as long as it meets the performance requirements. For MVACs and MVAC-like appliances, the performance requirement is 102 mm of mercury vacuum and for small appliances, the recovery equipment performance

requirements are 90 percent efficiency when the appliance compressor is operational, and 80 percent efficiency when the appliance compressor is not operational.

4. Technician certification is not required for individuals removing refrigerant from appliances in the waste stream.
5. The safe disposal requirements went into effect on July 13, 1993. Equipment must be registered or certified with the Agency. A sample form is attached.

Major Recordkeeping Requirements

1. Technician's servicing appliances that contain 50 or more pounds of refrigerant must provide the owner with an invoice that indicates the amount of refrigerant added to the appliance. Technicians must also keep a copy of their proof of certification at their place of business.
2. Owners of appliances that contain 50 or more pounds of refrigerant must keep servicing records documenting the date and type of service, as well as the quantity of refrigerant added.
3. Wholesalers who sell CFC and HCFC refrigerants must retain invoices that indicate the name of the purchaser, the date of sale, and the quantity of refrigerant purchased.
4. Reclaimers must maintain records of the names and addresses of persons sending them material for reclamation and the quantity of material sent to them for reclamation. This information must be maintained on a transactional basis. Within 30 days of the end of the calendar year, reclaimers must report to EPA the total quantity of material sent to them that year for reclamation, the mass of refrigerant reclaimed that year, and the mass of waste products generated that year.

Hazardous Waste Disposal

1. If refrigerants are recycled or reclaimed, they are not considered hazardous under federal law. In addition, used oils contaminated with CFCs are not hazardous on the condition that:
   a. They are not mixed with other waste.
   b. They are subjected to CFC recycling or reclamation.
   c. They are not mixed with used oils from other sources.
2. Used oils that contain CFCs after the CFC reclamation procedure, however, are subject to specification limits for used oil fuels if these oils are destined for burning. Individuals with questions regarding the proper handling of these materials should contact EPA's RCRA Hotline at 800-424-9346 or 703-920-9810.

Enforcement

1. EPA is performing random inspections, responding to tips, and pursuing potential cases against violators. Under the Act, EPA is authorized to assess fines of up to $27,500 per day for any violation of these regulations.

Planning and Acting for the Future

1. Observing the refrigerant recycling regulations for Section 608 is essential in order to conserve existing stocks of refrigerants, as well as to comply with Clean Air Act requirements. However, owners of equipment that contains CFC refrigerants should look beyond the immediate need to maintain existing equipment in working order. EPA urges equipment owners to act now and

prepare for the phaseout of CFC production and import, scheduled for January 1, 1996. Owners are advised to begin planning for conversion or replacement of existing equipment with equipment that uses alternative refrigerants.

2. To assist owners, suppliers, technicians and others involved in comfort chiller and commercial refrigeration management, EPA has published a series of short fact sheets and expects to produce additional material. Copies of material produced by the EPA Stratospheric Protection Division are available from the Stratospheric Ozone Information Hotline (see hotline number below).

For Further Information

1. For further information concerning regulations related to stratospheric ozone protection, please call the Stratospheric Ozone Information Hotline: 800-296-1996. The Hotline is open between 10:00 AM and 4:00 PM, Eastern Time.

Required Levels of Evacuation for Appliances
Except for Small Appliances, MVACS, and MVAC-like Appliances

Type of Appliance	**Inches of Mercury Vacuum* Using Equipment Manufactured:**	
	Before Nov. 15, 1993	**On or after Nov. 15, 1993**
HCFC-22 appliance** normally containing less than 200 pounds of refrigerant	0	0
HCFC-22 appliance** normally containing 200 pounds or more of refrigerant	4	10
Other high-pressure appliance** normally containing less than 200 pounds of refrigerant (CFC-12, -500, -502, -114)	4	10
Other high-pressure appliance** normally containing 200 pounds or more of refrigerant (CFC-12, -500, -502, -114)	4	15
Very High Pressure Appliance (CFC-13, -503)	0	0
Low-Pressure Appliance (CFC-11, HCFC-123)	25	25 mm Hg absolute

* Relative to standard atmospheric pressure of 29.9" Hg ** Or isolated component of such an appliance

PSD60 FACILITIES DEPARTMENT	
General Safety	**2026**

PURPOSE

The personal safety and health of each staff of the Facilities department is of primary importance. The prevention of occupationally induced injuries and illness is of such importance that it is given precedence over operating productivity whenever necessary. To the greatest extent possible, management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest industry standards. Each Staff is responsible for wholehearted, genuine cooperation with all aspects of the safety and health program, including compliance with all rules and regulations and for continuously practicing safety while performing their duties.

Facilities is committed to a safety and health program conforming to the best practices of an organization of this type. To be successful, each participant must possess the proper attitudes toward injury and illness prevention. This is true on the part of the Executive Director, managers, supervisors and all Staff. It also requires cooperation in all safety and health matters, not only between supervisor and worker but also between each employee and his/her co-workers as well as with our other customers. Only through such cooperative efforts can a safety program be established and preserved.

Our Goal is to have no preventable lost time accidents or injuries. Our objective is a safety and health program that assists Staff in knowing and using best safety practices and thus reduce the number of injuries and illnesses to an absolute minimum.

RESPONSIBILITIES

1. The Executive Director has the overall responsibility for the administration of this procedure.
2. Supervisors and Managers are responsible for ensuring that all aspects of this Procedure are adhered to. Training will be documented and provided to the Administrative Assistant.
3. Staff is responsible for complying with all aspects of this Procedure and to immediately report any deficiencies to their respective supervisor.

EXCLUSIONS

None

INTERPRETATION

The authority to interpret this procedure rests with PSD60 and is generally managed by the Executive Director of Facilities & Construction.

Approved: R. Lawson, Executive Director
Effective: 10/01/2026
Supersedes any previous

GENERAL SAFETY PROCEDURES

GENERAL: The following procedures generally hold true for all crafts and areas of Facilities.

1. Report any injury to your supervisor immediately.
2. All equipment should be inspected and tested before each use to ensure proper operation and safety. Damaged equipment or equipment which fails to meet safety standards shall be removed from service immediately and replaced with equipment which does meet the standards.
3. Conduct yourself properly at all times. Horseplay is not permitted.
4. Support your safety program and take an active part in safety meetings. Advise your supervisor promptly of any unsafe conditions or practices.
5. Obey safety signs in buildings and on equipment.
6. Running is not permitted anywhere except in extreme emergencies.
7. Do not report to work during "off hours" without your supervisor's knowledge.
8. Do not permit family members, friends or acquaintances to participate in work related tasks unless those persons are employees of Facilities.

SAFETY RESPONSIBILITY

RESPONSIBILITY: The supervisors and lead personnel are responsible for:

a. The enforcement of all safety rules including the use of PPE (Personal Protective Equipment) and shall take such action necessary to obtain compliance.

b. The orientation and instruction of all new personnel in the safe performance of their duties.

c. The review of all their operations to determine if they are being performed in a safe manner.

d. Holding periodic (i.e., during staff meetings) safety meetings on pertinent safety topics and encouraging Staff to discuss safety matters that concern them.

e. Correcting any unsafe acts or conditions observed immediately or as soon as possible and those that cannot be resolved at the supervisory level reported to the Environmental Safety Officer.

f. Help motivate staff to carry out the accident prevention program by instruction, example and sincerity.

g. Investigate accidents and assist their assigned staff in preparing the accident report form.

h. Direct the use of PPE as required by safety rules or common sense such as safety glasses, gloves, hard hats, etc.

i. Supervisors and lead workers will use this equipment themselves as required and set a good safety example.

EAR PROTECTION

1. Ear protection (PPE) is required in some designated areas and work duties. Obey safety signs and see your supervisor to obtain proper ear protection.

2. Use earplugs or earmuffs when working on or near equipment which produces high noise levels above 85 decibels, such as generators and power tools. For electric hammer drills, pneumatic jackhammers and other high emitting noise equipment, dual hearing protection (ear plugs and earmuffs) must be used anytime noise levels exceed 100 decibels.

ELECTRICAL SAFETY

1. All electrical work shall be performed by under the supervision of qualified personnel and will be installed in accordance with the current governing National Electrical Code.
2. The Lockout or Tagout Procedure shall be followed before electrical circuitry or equipment is worked on.
3. In those few situations where electrical circuitry or equipment cannot be de-energized the following special safety precautions shall be taken before the work begins:
4. Each occurrence must be documented, dated and signed by the supervisor, and a copy is to be sent to the FM Safety Manager. This documentation is to be retained for three years.
5. At least two qualified persons shall be at the work site.
6. Only insulated tools which have been tested and approved shall be used.
7. Only rubber gloves which have been tested and approved shall be used.
8. Only rubber floor mats which have been tested and approved shall be used.
9. Only protective eye wear which has been tested and approved by ANSI shall be used.
10. Any additional safety equipment/precautions deemed necessary by the supervisor or persons performing the work shall be used.
11. Keep all workstations clean and free of debris.
12. Keep all equipment clean and in good working condition.
13. Label all switches and circuit breakers.
14. Close and fasten all electrical boxes.
15. Use the proper Lockout/Tagout procedures.
16. Always read and follow the manual as to the correct operation and use of equipment. Only use equipment for the purpose it is intended.
17. Report all accidents to your supervisor immediately.

EYE & FACE PROTECTION

1. Industrial eye injuries occur at a rate of two per minute and are the costliest in terms of lost production and earning power.
2. Of the more than 1,000 industrial eye injuries that occur every working day, over 90 percent of them are needless and preventable.
3. Wear safety protection equipment (Especially the wrap around face shield. Safety glasses or goggles are still required to be worn with the face shield.) When operating machines and equipment that can produce flying particles.
4. Safety glasses or goggles are required when working overhead.

5. Safety glasses are required when using power tools.
6. Safety glasses are required when drilling, chipping, driving nails, hitting steel on steel, and when pouring concrete.
7. Safety glasses with side shields are required when handling chemicals. Corrosive chemicals, such as drain openers, battery acids and wet cell batteries require a full-face shield in addition to safety glasses, PVC gloves and a rubber apron. Keep hands away from eyes.
8. When welding, wear a welder's helmet, apron, gloves, and jacket.
9. Know the location and method of operation of eye wash stations and flood eyes with water if contact with foreign matter is suspected. Get help. Do not try to remove foreign matter yourself.

FLOOR SAFETY

1. All floor finishes used shall be designated as non-slip or slip resistant on the manufacturer's label.
2. All spills shall be mopped up as quickly as possible after notification.
3. Wet floor signs shall be placed where floors are being mopped, stripped, refinished or carpets shampooed and shall be left in place until the floor or carpet has dried.
4. In addition to wet floor signs, barricades shall be placed, where possible, when floors are being stripped or refinished.
5. Use extreme caution when stripping floors. The combination of water, stripper, and old wax makes a very slippery surface.
6. Stairway work is hazardous. Remember that mop buckets and mop handles can become tripping hazards.
7. Where barricades are not feasible and stripping or refinish work is being performed in high traffic areas, and staff should be designated to stand watch to warn people of the slippery conditions. Only one half of the traffic area should be worked on at a time.
8. Building entrances are to be watched, wet floors mopped, walk off carpets used and changed as they become saturated during rainstorms or snow conditions. Signs and barricades shall be erected whenever wet floors are discovered.
9. Report damaged stair treads when found. Stair treads shall be repaired or replaced when damaged.
10. Report loose handrails in stairways or on porches when found. Loose handrails shall be repaired as soon as possible after notification.
11. All floor surfaces shall be maintained with minimal (or no) surface irregularities i.e., chipped tiles, torn carpets, etc. When these items are found report them to your supervisor immediately.

FOOT & HAND PROTECTION

1. Approved footwear should be worn at all times. See your supervisor for what is acceptable in your work area.

2. Wear leather or Kevlar gloves when handling sharp or rough objects and breakable objects such as glass.
3. Asbestos gloves and treated terry cloth gloves should be used to protect hands from heat exposure.
4. Di-electrically tested rubber gloves should be worn to keep hands insulated from electric shock.
5. Rubber, neoprene, vinyl, or nitrile gloves should be worn when handling most chemicals and corrosives.
6. Rubber gloves should be worn when handling items which might contain blood borne pathogens.
7. Finger and hand injuries can occur without warning; therefore, sound judgment should dictate the use of gloves when performing other tasks.

HAND TOOL SAFETY

1. Hand tools are used by every shop in Facilities. The misuse of hand tools in industry is the cause of about seven to eight percent of all compensable injuries each year. These injuries often involve severe disabilities. The following are examples of hand tool injury and some probable causes:
    a. Loss of eye/vision - using striking tools without eye protection.
    b. Puncture wounds - using a screwdriver with a loose handle which causes the hand to slip.
    c. Severed fingers, tendons and arteries - using a dull knife requires so much force that your hand may slip down the blade.
    d. Broken bones - using the wrong hammer for the job and smashing a finger.
    e. Contusions - using a small wrench for a big job and bruising a knuckle.
2. Basic Rules for Hand tool Safety:
    a. Safety is a state of mind. Always think when using a tool:
        i. Is it in good condition?
        ii. Is it sized right for the job?
        iii. Is it in the proper working condition?
    b. Every tool was designed to do a certain job. Use it for its intended purpose.
    c. Keep your tools in good condition: sharp, clean, oiled, dressed and not abused.
    d. Worn tools are dangerous. For example, the teeth in a pipe wrench can slip if worn smooth, an adjustable wrench will slip if its jaws are sprung and hammer heads can fly off loose handles.
    e. Tools subject to impact (chisels, star drill, punches, etc.) tend to "mushroom". Keep them dressed (sharpened) to avoid flying spalls. Use tool holders.
    f. Do not force tools beyond their capacity or use "cheaters" to increase their capacity.
    g. Secure your work in a vise whenever possible. Never hold small work in your hand when using a screwdriver.

h. Chisels, screwdrivers or other pointed tools should never be carried in clothing pockets. Use tool belts designed for carrying tools.

i. Hammers should have heads ground properly. Should not have broken claws or handles. Check for loose handles. Always use proper size and weight for the job.

j. Cutting tools should be kept sharp to ensure good smooth cutting. Always use proper handles.

k. Drill Bits should be kept sharp, not dull, chipped, rounded, or tapered.

l. Screwdriver points should not be badly worn and handles should be in good condition. Use the proper size and type of screwdriver for the job.

m. Wrenches, if adjustable, must work freely and adjust properly. Gripping teeth or smooth jaws should not be worn. Always use the proper size for the job.

3. Always wear the PPE required for the job. Protect your eyes, hands, ears and other body parts. Keep clothing out of your work.

HEAD PROTECTION

1. Approved hard hats shall be worn on all construction sites and renovation areas.
2. Never keep anything under your hard hat (pack of cigarettes, wallet, etc.) it interferes with the suspension. Do not place decals or paint on hard hats.
3. A suspension that is too flexible permits contact with the head upon impact, causing skull fracture or concussion.

LADDER SAFETY

1. Stepladders:

   a. Inspect ladders before using them. Remove defective ladders from service and notify your supervisor.

   b. Always open and set the ladder level on all four feet on a firm base, lock spreaders in place.

   c. Never use a stepladder like a straight ladder.

   d. Never climb higher than the second tread or rung from the top.

   e. Do not place tools or materials on steps.

   f. Do not place a ladder in front of a door that opens toward it unless the door is locked, blocked or guarded by someone.

   g. Keep both feet on the ladder. Do not reach out too far or place one foot on some other surface.

   h. Only one person is to be on a ladder at any time.

   i. Do not use ladders for skids, braces, workbenches or any other purpose other than climbing.

   j. Two people may be required when working from a ladder of any height, check with your supervisor before starting the task. (i.e., one person is required to hold an extension ladder at the bottom until it is secured or if it cannot be secured, such as light pole work.)

2. Straight and Extended Ladders:

a. Inspect ladders before using them. Remove defective ladders from service and notify your supervisor.

b. Use the four-to one ratio. Place the ladder so that its feet are one foot away from what it leans against for every four feet in height to the point where the top of the ladder rests.

c. Place the ladder's feet on a substantial and level base, NOT on movable objects, and the top of the ladder must be adequately tied off at the top to prevent slipping.

d. The top of the ladder must extend at least three feet beyond the supporting object when used as access to an elevated work area.

e. Hold onto the ladder with both hands when going up or down. If material must be handled, raise or lower it with a rope.

f. Always face the ladder when climbing up, climbing down or when working.

g. Be sure that your shoes are not greasy, muddy or slippery before climbing. Check ladder rungs for grease, mud and other debris and remove it before climbing the ladder.

h. Do not climb higher than the third rung from the top on straight or extension ladders.

i. Never use a metal ladder around electrical circuits or place where they may come in contact with such circuits.

j. When work situations require a 20-foot or longer extension ladder, two Staff shall be assigned to the job.

NOTE: Two people may be required when the ladder is under 20 feet high, check with your supervisor before starting the task.

LIFTING AND CARRYING SAFETY

1. The manual handling of material accounts for approximately 25 percent of all occupational injuries. Lower back pain is second only to head colds as the leading cause of absenteeism. Right now, seven million employees are being treated for chronic back problems in this country and new cases occur at the rate of about two million per year.

2. Before lifting anything, follow these steps:

   a. Inspect material for slivers, jagged edges, burrs, rough or slippery surfaces, protruding nails, etc.

   b. Make sure that your hands are free of oil and grease.

   c. Wear appropriate protective clothing (gloves, etc.).

   d. Size up the load. Estimate the weight, size and shape. If the load is too much to handle, ***BE SURE TO GET HELP***.

   e. Stand close to the object, keeping your feet 8 to 12 inches apart for good balance.

   f. Bend the knees to a comfortable position and get a good handhold.

   g. Using both leg and back muscles and keeping your back straight, lift the load straight up. Move smoothly and easily, pushing with the legs and keeping the load close to your body. Avoid sudden jerks.

h. Lift the load to carrying position. Avoid twisting and turning about until the lift is complete.

i. To turn the body, change foot position and check to see that your path is clear before moving.

3. To set the load down, bend the knees, using leg and back muscles. When the load is securely positioned, release it.

POWER TOOL SAFETY

1. Portable Power Tools:

   a. Do not operate any power tool you have not been trained to operate. Read the owner/operator manual carefully. Check with your supervisor if you have any questions.

   b. Examine each tool before using it. Make sure that the electrical cord is not damaged and it has a ground plug. Look for damaged parts. Remove defective tools from service and tag for repair.

   c. Keep guards in place and in working order.

   d. Suspend cords or hoses over aisles and doorways where they will not pose a tripping hazard. If cords or hoses cannot be suspended, they should be protected with wooden strips or special raceways.

   e. Use the proper protective equipment; goggles, earplugs, respirators, gloves, etc.

   f. Use clamps or a vice to secure your work - NOT your hands.

   g. Disconnect all power sources before making adjustments, changing bits, blades, etc.

   h. Do not over-reach. Keep proper footing and balance. Use two hands and be ready to release trigger in case of jamming.

   i. Never leave a tool in an overhead place where it might fall.

   j. Always unplug the tool before leaving the work site.

   k. Always return the tool to proper storage area. Make sure it has been cleaned and is ready for use.

2. Craft Specific Power Tools:

   a. Only trained and authorized Staff may operate craft specific power tools. Do not operate tools or equipment you have not been trained on.

   NOTE: Because these tools may be used by Staff from other crafts it is the responsibility of the craft which owns the tool to inquire of other users as to whether they have the training on how to operate the tool and understand the safety requirements for that tool. If there is any doubt the supervisor is to be notified and training documentation verified.

   b. Do not operate machines unless guards are in place and in good condition. Remove cranks, keys or wrenches used in service work.

   c. Before adjustments, servicing or repairs are begun, shut down the machine and disconnect the power source to prevent accidental starting.

   d. Use clamps or vises to hold work whenever possible.

   e. Keep fingers away from moving parts.

f. Be sure that the machine has stopped and is not coasting before removing waste. Use a brush to clean up and deburr.

g. Do not wear loose clothing, ties, rings or other jewelry around operating machines. Keep sleeves buttoned or rolled up.

h. Keep the work area clear of other people and obstacles.

i. Clean the machine, sweep up and dispose of scraps and debris after use.

j. Make sure that people in the immediate area are aware of what is going on.

VEHICLE OPERATION

1. Managers and Supervisors are responsible to ensure that all vehicle/motorized equipment operators are properly trained and have a current valid vehicle Operator's License to operate the type or class of vehicle they are to operate as required by the State of Colorado.
2. The Executive Director shall make a copy of the Operator License to keep on file.
3. Where additional safety training and/or certification is required by OSHA or another agency, such training and certification will be documented and kept in a current file for each operator.
4. It is the responsibility of each operator to conduct daily maintenance checks of the vehicle/equipment that is assigned to them, to ensure safe operation, and to check for damage. These daily checks are to be documented on the form supplied by the Transportation Section. All existing damage to a vehicle is to be listed on the form. All new damage is to be reported and listed. If damage cannot be attributed to a particular event, the last driver to have responsibility for the vehicle will be held accountable for the damage.
5. The vehicle operator is responsible for the safety and conduct of his/her passengers and is to observe all motor vehicle laws:
6. Driver and passengers SHALL use seat belts if they are provided. The use of seat belts by all front seat occupants is MANDATORY and “It is the LAW”. Exception: Riding mowers without roll bars.
7. Passengers must occupy any empty seat inside the vehicle.
8. Arms or legs shall not extend beyond the sides, rear or cab of the vehicle.
9. Obey all posted speed limits on public roadways. Drive at a safe speed for conditions (wet pavement, pedestrians, etc.).
10. Motor vehicles shall yield to pedestrians and persons in wheelchairs or on bicycles.
11. Park properly using a designated parking space if one is available. DO NOT park in fire lanes or handicap places. Fines for these violations are the responsibility of the driver, NOT Facilities. Always place vehicle in park, set the parking brake and remove keys.
12. Use extreme caution when backing a vehicle. When there are two or more occupants in a vehicle, one individual will stand at the rear of the vehicle to direct the driver. When the driver is the only occupant in the vehicle, extreme caution is to be taken to ensure that the area is clear before starting to back the vehicle (i.e., get out and walk around the vehicle to observe obstacles, ask any person in the vicinity to assist in directing you to back safely, etc.).

13. Do Not operate a vehicle which is not operating properly. Report all defective equipment to your supervisor and turn the vehicle in for repair immediately (Get it fixed.)
14. Report all vehicle accidents immediately to the Police and your Supervisor.
15. Parking shall be in designated parking slots whenever such are available. Parking on sidewalks or in fire lanes is not normally permissible, however, parking on non-fire lane sidewalks is acceptable in extraordinary circumstances (e.g., moving office furniture).
16. Use rear entrances of buildings whenever possible.
17. DO NOT block fire lanes or trash pickup areas.
18. Vehicles are to be kept clean and free of clutter, inside and out.
19. Shut off motor when refueling.
20. Shut off motor, set parking brake, and remove keys before leaving the vehicle. (DO NOT LEAVE A VEHICLE WITH THE ENGINE RUNNING.)
21. If a vehicle is difficult to maneuver in tight areas of the site, the driver should not force the vehicle into those areas. Use a different vehicle or park further away.
22. If a barricade is removed or a gate unlocked to gain access to a building or area it is the driver's responsibility to replace the barricade or lock the gate after driving through.
23. Vehicles are not to be used for personal business and are not to be used off site except on official business.
24. Ticket(s) received due to violations of this procedure is/are the responsibility of the staff receiving same.

WELDING & CUTTING SAFETY

1. Wear the PPE required for the job.
2. Use appropriate mats and shields.
3. Keep welding leads and burning hoses clear of passageways.
4. Inspect all leads, grounds, clamps, welding machines, hoses, gauges, torches and cylinders before each use. Remove defective equipment from service, tag and notify your supervisor.
5. Avoid breathing fumes. Use exhaust fans, blowers or a respirator. (Must have training and fitting to use respirators).
6. Do not weld or cut on closed vessels, tanks, etc., which have not been cleaned.
7. Each welder is responsible for containing sparks and slag and/or removing combustibles to prevent fires.
8. A dry chemical fire extinguisher must be within 30 feet of any welding, cutting or open flame work. Fire extinguisher training is required for all Staff who operate welding equipment. All training is to be documented and turned into the Administrative Assistant.
9. Electric Welding:
   a. Wear appropriate PPE required for the job.
   b. Approved goggles shall be worn with at least a #3 filter with a safety lens on both sides of the filter.

c. An approved welding helmet shall be worn.

d. All hoses, gauges and torches shall be inspected before each use.

e. All work must have a separate and adequate ground connection.

f. Do not leave a rod in the electrode holder when you lay it down. Put stub in the proper container.

g. All ARCS should be shielded in operating areas.

h. Never do electric welding from a metal ladder.

i. Make sure that the machine is turned off at the end of your shift and that your work area has been cleaned up.

10. Cutting (gas burning)

a. Wear appropriate PPE required for the job.

b. Approved goggles shall be worn with at least a #3 filter with a safety lens on both sides of the filter.

c. An approved welding helmet shall be worn.

d. All hoses, gauges and torches shall be inspected before each use.

e. Before connecting regulators to cylinders, carefully open the cylinder valve a crack to blow out any foreign particles. Close the valve. After the regulator is connected, stand to one side of the gauge while the cylinder valve is opened. Open the cylinder valve slowly.

f. Be certain that the second stage of the regulator is closed BEFORE opening the cylinder valve.

g. Open valves on fuel gas cylinders (propane, acetylene, natural gas) 1/4 turn only. Open oxygen cylinder valves wide open. Valve wrench must be kept in place during use.

h. Do not exceed 15 PSI on the torch side of the gauge when using acetylene.

i. When lighting a torch, open the gas valve on the torch BEFORE opening the oxygen valve. Use an approved spark lighter. Do not use matches or cigarettes to light a torch.

j. Compressed gas cylinders must be tied off vertically to an adequate support while in storage, transit or use.

k. Spare oxygen cylinders are to be stored separate from other compressed gases and flammables and must be tied off vertically to an adequate support.

l. Do not use compressed gas to clean your clothing or to clean your work area.

m. Place cylinders and hoses where they are not exposed to sparks and slag from the cutting operation.

AIR CONDITIONING (HVAC)

1. Keep all equipment clean and work areas free of dust and debris.
2. Wear proper PPE when working with compressed gases.
3. Report all accidents to your supervisor immediately.
4. Store all flammables in the proper containers.

5. Technicians must use every precaution when working with pressures, electrical energy, heat, cold, rotating machinery, chemicals and when moving heavy objects.
6. Pressure Vessels and Piping - Keep protective cap on all cylinders while they are being moved. Do not apply heat to refrigerant cylinders. Keep eyes and skin away from liquid refrigerant by wearing gloves and side shield goggles. All cylinders into which refrigerant is transferred should be approved DOT recovery cylinders. Always use regulators on nitrogen, oxygen and acetylene cylinders.
7. Electrical Hazards - Electrical power should always be shut off at the distribution panel and locked in an approved manner when installing or servicing equipment. (See Lockout/Tagout Procedure). Do not stand in a damp or wet area while working on electrical components. Use only properly grounded power tools connected to properly grounded circuits. Non-conducting ladders should be used on all jobs. Be careful of jewelry around live electrical circuits. Use hand tools with approved insulated handles.
8. Heat - When soldering or using concentrated heat, a fire extinguisher should always be close by on the job site. Use an appropriate shield when solder connections are made next to combustible materials or a finished surface. Never solder tubing lines that are sealed. Hot refrigerant lines, heat exchangers and motors can cause severe burns. Gloves should always be worn.
9. Cold - Liquid refrigerant can freeze your skin or eyes instantaneously. Do not let refrigerant come in contact with your skin. While working in walls in freezers, always wear appropriate coat and gloves.
10. Mechanical Equipment - Loose clothing should never be worn around rotating machinery. Have all pump coupling and fan guards installed on equipment. Never attempt to stop a motor or other mechanism by gripping the belt. Use 1face shield while using grinders. Always keep tool rest on grinder adjusted properly.
11. Moving Heavy Objects - When you lift objects, use your legs not your back. Use proper tools such as pry bar, refrigerator hand truck, portable dolly, lever truck and lift gate on truck to help move heavy objects.
12. Refrigerant Vapors - Refrigerants are heavier than air and can displace the oxygen in a closed space. Proper ventilation must be used at all times to prevent being overcome by the lack of oxygen. Use fans for cross ventilation and fresh air. While repairing (soldering) refrigerant piping, since the fumes are toxic and may cause harm, keep your head below the rising fumes and make sure there is plenty of ventilation.
13. Chemicals - All chemicals should be handled according to manufacturer's directions. Read the entire label before starting a job. Know the location of the SDS book and how to read an SDS. Conduct a chemical inventory each year in July. Handle all chemicals with rubber gloves, face, and eye protection. Contaminated refrigerant and oil from compressor burn out may be hazardous to your skin, eyes, and lungs because they contain acid.

BUILDING AUTOMATION SYSTEMS

1. Keep all workstations clean and free of dust and debris.
2. Follow proper procedures.
3. Always read and follow the manual as to the correct use of equipment.
4. Report all accidents to your supervisor.

CARPENTRY

1. Keep all equipment clean and work areas free of dust and debris.
2. Keep all extension cords off the floor.
3. Keep aisles free of obstructions and clearly marked.
4. Ensure that all guards are installed on power equipment and in good working condition.
5. Do not allow Staff or others to operate equipment unless they have been checked out on all safety requirements for that equipment.
6. Chemicals - All chemicals should be handled according to manufacturer's directions. Read the entire label before starting a job. Know the location of the SDS book and how to read an SDS. Conduct a chemical inventory each year in July. Handle all chemicals with rubber gloves, face, and eye protection.
7. Store all flammables in the proper containers.
8. Report all accidents to your supervisor immediately.

CUSTODIAL

1. Unplug all machines at the wall outlet (by grasping the plug not pulling on the cord) before leaving the work area.
2. Wear the proper PPE for the task at hand.
3. Report all accidents to your supervisor immediately.
4. Keep closets and work areas clean and uncluttered.
5. Know where the SDS book is kept in your area and how to read an SDS. Conduct a chemical inventory each year in July. Handle all chemicals with rubber gloves, face, and eye protection.
6. Do not use any chemical before you have been trained on the proper use of that chemical and have read the SDS for that chemical.
7. Do not put caustic chemicals (such as bleach) in spray bottles. If in doubt, ask your supervisor.
8. Be sure that all containers of chemicals (including spray bottles) are properly labeled.
9. All custodians are considered to be AT RISK for Bloodborne Pathogens. Know where the procedure book is in your area and know the proper method to clean up after a blood or body fluid incident.
10. Inspect all equipment before and after use for damage, loose nuts, bolts, frayed or loose wiring, missing ground pin on the plug, and for oil or grease leaks. Keep equipment tightened up. If a bolt or nut keeps working loose, there is damage to the equipment or to the electric cord or plug, notify your supervisor immediately to have the equipment repaired. Do not attempt repairs yourself.
11. Be sure that all switches on electrical equipment are in the OFF position and the ground pin is in place before plugging them into any outlet.
12. Buffers:
    a. Do not operate buffers unless you have been trained to do so.
    b. Always adjust the handle properly before starting the buffer.

c. Do not operate the buffer with one hand.

d. Keep the cord behind you and up away from your feet.

13. Use a Ground Fault Interrupter (GFI) plug when working with liquids of any kind. If you do not have one available ask your supervisor.
14. When using a buffer to clean carpets be sure that the bonnet is adjusted properly. If the buffer starts to chatter or jump, stop immediately and readjust the bonnet. Do not attempt to bonnet throw rugs or mats.
15. Two or three people are required when moving buffers to different floors in buildings where there is no elevator. Do not attempt this alone. See your supervisor for the proper method of moving buffers.
16. Always disconnect electrical equipment by grasping the plug at the outlet. Do not attempt to disconnect the plug by yanking on the cord.
17. Do not attempt to remove a plug if your hands are wet.
18. When using an extractor or a wet/dry vacuum to clean up a large amount of water be sure that a GFI is in place.
19. Disconnect fans and other electrical equipment before cleaning.
20. Place wet floor signs to warn of slippery conditions.
21. Do not block stairways or doors with electric cords or other pieces of equipment that could cause tripping hazards.
22. Be careful when carrying mops or brooms so that no one is injured by the handles. Be especially careful in areas with low ceilings that ceiling tiles or sprinkler heads are not damaged.
23. Keep oil dust mop heads covered with plastic bags when not in use. Place oily rags in metal containers or dispose of them properly.
24. When using ladders refer to the section on ladder safety.
25. Lift properly using your legs, not your back. Get help to lift heavy objects.
26. Use eye protection when cleaning above your head.

PAINTING

1. Even the most common substances can be hazardous if they are used without taking common sense precautions. A perfect example is paint - so seemingly routine that the whole family uses it. While most paint is not an especially high-risk substance, many paints contain ingredients that can cause health and safety problems. Workers must know the hazards and the basic protective measures that can make painting as safe as they assumed it was.
2. Keep all equipment clean, in good working condition and stored in its proper place.
3. Wear proper PPE when working including but not limited to the following:
4. Clothing that fully covers the skin.
5. Gloves that resist specific paint ingredients.
6. Eye/face protection if recommended. (Safety glasses, goggles, hoods or face shields.)
7. Properly fitted respirators when required.

8. Use protective skin creams when appropriate.
9. Keep area clean and access to tools and equipment uncluttered.
10. Be aware of these potential hazards:
    a. Rashes, swelling, etc., from short term skin contact.
    b. Eye irritation; sore throat, cough, runny nose; nausea, fatigue, dizziness, flu-like symptoms from short term inhalation.
    c. Liver, kidney, lung, digestive system, central nervous system damage from long term or massive exposure.
    d. Sensitization (skin or respiratory) to any future exposure from long term or massive exposure.
    e. Fire - avoid using paint in an unventilated area; never expose it to an ignition source such as a spark, lit cigarette or static electricity.
    f. Explosion, especially if closed container is exposed to high heat.
    g. Reactivity from mixing with or exposure to other substances, including water.
11. If you or a fellow worker are exposed to a paint hazard:
    a. Inhalation - Get to fresh air immediately. Oxygen or artificial respiration may be needed.
    b. Skin contact - Wash with soap and water after removing any contaminated clothing.
    c. Eye contact - flush eyes with warm water for at least fifteen minutes and get medical attention at once.
12. Know where the SDS book is kept and how to read an SDS. Check labels of all chemicals and SDS's for ingredients, hazard, protective procedures and PPE. Conduct a chemical inventory each year in July. Handle all chemicals with rubber gloves, face, and eye protection.
13. Ventilation. Painting in a well-ventilated area reduces the chance of inhaling hazardous vapors, and makes fires much less likely. Spray booths used in work place painting have built in ventilation systems that provide fresh air in the booth while venting out hazardous substances. Always make sure the ventilation system is working properly before painting in a booth.
14. Special precautions for spray booths:
    a. Never use anything that could spark or flame when in a spray booth.
    b. Space heaters, hot surfaces, portable lamps, or trash that could catch fire should be kept out.
    c. Don't keep more paint than you need for the job in a spray booth.
    d. Remove debris from spray booth immediately and dispose of properly.
    e. Have fire extinguishers and/or sprinklers nearby.
    f. Respirators are required when working in a spray booth.
    g. Use water-based paints when possible.
    h. Don't mix paints with other substances without approval.
    i. Keep paints away from ignition sources and NEVER smoke in areas where paint is used or stored. Post NO SMOKING signs.

j. Keep paint containers closed and tightly sealed when not in use.

k. Don't use paint from a container with missing or illegible label.

l. Use ventilation and protective equipment when scraping or removing old paint to prevent lead exposure.

15. Store paint in fireproof cabinets in areas with moderate temperatures, away from ignition sources and incompatible materials.
16. Wash before eating, drinking, smoking, applying makeup or touching contact lenses.
17. Remove paint from skin according to manufacturer’s recommendations, NEVER use solvents or thinners.
18. Contain and clean up any spills immediately, according to SDS and supervisor's instructions.
19. Dispose of empty paint cans and combustible rags promptly in proper receptacles. Never leave brushes, rags or rollers in solvent for extended periods.
20. Dispose of excess paint, thinners and solvents according to proper procedures.
21. Be prepared for an emergency. Fast, proper first aid is critical when someone is overexposed to a paint product. For inhalation related problems, get the person to fresh air right away. If needed, provide oxygen or artificial respiration. For rashes or other skin problems, remove contaminated clothing and wash thoroughly with soap and water. When paint comes in contact with the eyes, flush your eyes with warm water for at least 15 minutes and get immediate medical care.
22. Report all accidents to your supervisor immediately.

PLUMBING

1. All personnel shall comply with OSHA, Building Codes, and Facilities procedures.
2. Inspect equipment and tools for safety hazards before each use.
3. All hand and power tools shall be handled in a safe manner. (See the appropriate sections of this manual.)
4. Proper Personal Protective Equipment (PPE) is to be worn at all times. Some particular instances are:
5. Eye protection shall be worn when using tools, chemicals or when in areas where foreign matter may enter eyes.
6. Ear protection shall be used when entering areas of unsafe noise levels or when near equipment with unsafe noise levels.
7. Do not work on live steam lines or hot water lines before securing cut off valves. Follow Lockout/Tagout and Confined Space procedures.
8. Report all accidents to your supervisor immediately.
9. Store all flammables in their proper container.
10. Precautions shall be taken to avoid inhaling dangerous vapors by using proper ventilation and/or properly fitted respirators.
11. Care shall be taken when filling equipment with fuels by turning equipment off and letting it cool before refueling. Fuels shall be stored in approved containers.
12. Use of ladders shall comply with the appropriate section of this manual.

13. Welding equipment shall only be used by trained Staff. Welding shall be performed in designated areas. See the appropriate sections of this manual. Areas shall be free of flammables and properly ventilated. Appropriate PPE shall be worn.
14. Pipe threaders shall only by used by trained Staff. PPE shall be worn while using the pipe threader (i.e., leather gloves.)
15. Bench grinders and handheld grinders should be adjusted to manufacturer's specifications with the proper safety guards in place. Inspect grinding wheels for cracks and damage before use. If damaged DO NOT USE until repaired or replaced. Eye protection shall be worn at all times when performing grinding operations. Avoid breathing dust from grinding by wearing a facemask or respirator. DO NOT operate bench grinders or hand grinders unless you have been trained to do so.
16. Only trained personnel shall work with sewer cables. PPE shall be worn when working with sewer cables.
17. Extra precautions shall be taken when operating power equipment. Do not wear loose clothing or jewelry that may become entangled and cause injury to the operator or bystanders.
18. Only trained personnel shall work on steam equipment or piping. Confined space and Lockout/Tagout procedures shall be followed. PPE shall be worn.
19. Only trained personnel shall work on electrical equipment. Know and understand the Lockout/Tagout procedure. The following additional precautions are required:
20. Never work with electrical equipment while in water or if equipment is wet.
21. All trouble lights, extension cords, electric tools, or any equipment with an electric cord shall have a ground pin in good condition on the plug. DO NOT use the item if the ground pin is missing or broken.
22. Inspect all electric cords and plugs for cracks in the insulation, exposed wires or missing or broken pins before each use. Turn in damaged equipment for repair or replacement.
23. Know where the SDS book is kept and how to read an SDS. Check labels of all chemicals and SDS's for ingredients, hazard, protective procedures and PPE. Conduct a chemical inventory each year. Handle all chemicals with rubber gloves, face, and eye protection.

PREVENTATIVE MAINTENANCE

1. All electrical work shall be performed by or under the supervision of qualified personnel and will be installed in accordance with the current governing National Electrical Code.
2. The Lockout or Tagout Procedure shall be followed before electrical circuitry or equipment is worked on. See note at the end of this section.
3. In those few situations where electrical circuitry or equipment cannot be de-energized the following special safety precautions shall be taken before the work begins:
    a. Each occurrence must be documented, dated and signed by the supervisor, and a copy is to be sent to the Environmental Safety Officer. This documentation is to be retained for three years.
    b. At least two qualified persons shall be at the work site.

c. Only insulated tools which have been tested and approved shall be used.

d. Only rubber gloves which have been tested and approved shall be used.

e. Only rubber floor mats which have been tested and approved shall be used.

f. Only protective eye wear which has been tested and approved by ANSI shall be used.

g. Any additional safety equipment/precautions deemed necessary by the supervisor or persons performing the work shall be used.

4. Label all switches and circuit breakers.
5. Close all electrical boxes.
6. Report all accidents to your supervisor immediately.
7. Store all flammables in their proper container.
8. Wear proper PPE when required.
9. Know the location of the SDS book and how to read an SDS. Be familiar with guidelines stated on SDS for chemicals being handled. Conduct a chemical inventory each year. Handle all chemicals with rubber gloves, face, and eye protection.
10. Follow the Confined Space Procedure.

UTILITY & MOVING

1. Follow general safety procedures.
2. Report all accidents to your supervisor immediately.
3. Follow Lockout/Tagout Procedure.
4. Know the location of the SDS book and how to read an SDS. Be familiar with guidelines stated on SDS for chemicals being handled. Conduct a chemical inventory each year. Handle all chemicals with rubber gloves, face, and eye protection
5. Use proper lifting techniques when moving heavy objects. If an item is too heavy for one person, get help.

WAREHOUSE & STOREROOM

1. Know and follow general safety procedures.
2. Keep aisles clear and properly marked.
3. Keep all exits clear.
4. Report all accidents to your supervisor immediately.
5. Store all flammables in proper containers.
6. Use proper lifting techniques.
7. Do not operate power equipment unless you have been trained to do so. Follow safety procedures when operating power equipment.
8. DO NOT flush chemicals down the drain before checking with your supervisor. Some chemicals or large quantities of any chemical must be disposed of by other methods.
9. Always flush drains with cold water before and after disposing of any chemicals.

10. Know the location of the SDS book and how to read an SDS. Be sure that each new chemical received has an SDS. Provide a copy of the SDS to the user and to the Administrative Assistant. Conduct a chemical inventory each year. Handle all chemicals with rubber gloves, face, and eye protection.
11. Report all accidents to your supervisor immediately.

BACK SAFETY

1. Maintain correct posture.
2. Use proper lifting techniques.
3. Use personal protective devices.
4. Size up the load. Estimate the weight, size and shape. If the load is too much to handle, ***BE SURE TO GET HELP***.
5. Report all accidents to your supervisor immediately.

BLOODBORNE PATHOGENS

1. Universal Precautions:
   a. Treat all body fluids as potentially infectious
   b. Use of PPE (Personal Protective Equipment) - gloves - look for visible tears, cover skin openings - we provide latex, nitrile gloves - wearing PPE greatly minimizes chances of contracting a BBP virus - demonstrate proper way to remove gloves - discard when soiled or torn
   c. Use a broom/dustpan/tongs to remove broken glass
   d. Handling trash - bags should be handled by the top - don't push the trash down unless you use something other than your hands
2. Clean-up Procedures:
   a. Barricade area to be cleaned
   b. Use a diluted bleach solution - 9 parts water, 1 part bleach and let set for at least 10 minutes
   c. Equipment used to clean up a BB spill should be disposed of in a red bio-hazard bag
   d. Thorough hand washing is the most important step in preventing an exposure
3. If an exposure occurs, Contact your supervisor immediately
   a. You will be sent to a licensed medical provider to have a blood line drawn
   b. You will be periodically re-tested - results will remain strictly confidential unless you choose to share them

GROUNDS MAINTENANCE

1. Tractor and Lawn Equipment
   a. All Staff shall be trained on each piece of equipment before they are allowed to use that equipment. Training shall be documented by the supervisor. Training shall be by qualified personnel only. New operators will be under the supervision of a trainer until they are fully qualified.
   b. Always read and follow the owner's manual as to the correct use of equipment. Only use equipment for the purpose it was intended.

c. Always inspect equipment before use. Look for loose or broken parts that could fly off during operation and to be sure that all safety features are installed properly and are operational. Do not use equipment if safety features are missing. Notify your supervisor of any discrepancies. Check all fluids prior to starting equipment.

d. Never take safety equipment (i.e., roll bars and guards, etc.) off the ground's equipment. Always make sure that all guards are in the appropriate safety position.

e. Always use eye and ear protection when using equipment where such use is required. When working in dusty conditions or spraying fertilizer and pesticides wear appropriate Personal Protective Equipment (PPE).

f. Always operate tractors and riding equipment at speeds that will not encourage tip-over or loss of control. Never operate tractors or riding equipment in areas (such as steep banks), that you have not been properly trained for.

g. Obey traffic regulations when operating riding equipment on roads. Remember to use hand signals when changing lanes or directions. All tractors/mowers operated on public roadways will have "SLOW MOVING VEHICLE" symbols displayed properly.

h. When fueling equipment, be careful to always let engines cool and use proper procedures to fill tanks so as not to spill fuel or cause fires. Never refuel equipment on grass areas, if at all possible.

i. Always store fuels in proper safety containers and fire-resistant lockers. Check stenciling on fuel cans to be sure you are putting proper fuel in the right equipment.

j. Never fill fuel containers while on a vehicle. Always fill cans while standing on the ground.

k. Never allow riders on a tractor or participate in "horseplay".

l. Keep the public and children away from the area where lawn equipment is in operation.

m. Always operate mowers with discharge chutes (with guards) facing away from pedestrians and vehicles. It is best to stop operation when pedestrians or vehicles are in close enough proximity to be hit by cuttings or debris discharged through guarded chutes.

n. Before beginning mower operations, check the area to be mowed for trash or objects and remove same prior to mowing.

o. Listen carefully for unusual noises or handling differences in your tractor. Stop your tractor and notify the supervisor if you are not certain your tractor is in proper working condition.

p. Monitor all gauges where applicable.

q. Notify your supervisor of all repairs that are made by qualified mechanics. Do not attempt to make your own repairs.

r. Clean and inspect your tractor at the end of the workday. Notify your supervisor if all is not as it should be.

s. Notify your supervisor if you experienced and difficulties or differences during the day.

t. When replenishing fuel cans, ensure that you use the proper gas or gas mixtures, as it is stenciled on the gas can.

u. Welding equipment shall only be used by trained Staff. Welding shall be performed in designated areas. See the appropriate sections of this manual. Areas shall be free of flammables and properly ventilated. Appropriate PPE shall be worn.

2. Pesticides

a. All persons applying pesticides for Facilities shall be certified to apply a pesticide.

b. Only qualified Staff should determine what if any pesticides should be used after identifying the pest and the amount of infestation.

c. Always follow the label directions in the use of any pesticide.

d. Always use the pesticide that is considered safest before resorting to a restrictive chemical.

e. Know where the SDS book is kept in your area and how to read an SDS.

f. Do not use any chemical before you have been trained on the proper use of that chemical and have read the SDS for that chemical. Conduct a chemical inventory each year. Handle all chemicals with rubber gloves, face, and eye protection.

g. Be sure that all containers of chemicals (including spray bottles) are properly labeled.

h. Always wear the proper PPE (i.e., clothing, gloves, mask, respirator, etc.) when such use is indicated on the label or when directed by your supervisor.

i. Never transport or keep pesticides in any container other than the one it came in.

j. Do not mix more than can expect to be used on one shift. Empty and rinse tanks and containers at the end of each shift. Dispose of residue properly.

k. Never apply pesticides during windy conditions that may favor drift to undesired areas.

l. Never apply pesticides when the public or children are in the area of application. Follow label directions as to re-entry procedures.

m. Cleaning Eye wear and Respirators - Hand-wash reusable respirator face pieces, goggles, face shields and shielded safety glasses. Follow the manufacturer’s instructions. In general, use mild detergent and warm water to wash the items thoroughly. Rinse well. Wipe dry or hang in a clean area to air dry.

n. Recommended procedure for washing/cleaning most PPE:

Note: Follow the manufacturer's cleaning instructions. If the instructions say only to wash the item, or if there are no cleaning instructions, follow the procedure below:

i. Rinse in a washing machine or by hand.

ii. Wash in a washing machine, using a heavy-duty detergent and hot water for the wash cycle.

iii. Wash only a few items at a time to allow plenty of agitation and water for dilution. Use the highest water-level setting.

iv. Rinse twice using two cycles and warm water.

v. Use two entire machine cycles to wash items that are moderately to heavily contaminated.

vi. Run the washer through at least one more entire cycle without clothing, using detergent and hot water, to clean the machine.

vii. Some plastic or rubber items that are not flat, such as gloves, footwear and coveralls, MUST BE WASHED TWICE. Once to clean the outside and a second time after turning the item inside out.

viii. Some items, such as heavy-duty boots and rigid hats or helmets, should be washed by hand using hot water and heavy-duty detergent.

ix. Hang the items to dry, if possible. Let them hang for at least 24 hours in an area with plenty of fresh air, preferably outdoors. Do not hang items in enclosed living areas.

x. You may use a clothes dryer for fabric items if it is not possible to hang them to dry, but after repeated use, the dryer may become contaminated with pesticides.

3. Working safely with pesticide equipment:

   a. The equipment you will be cleaning, adjusting, filling or repairing may have pesticides on it. Although you may not be able to see or smell the pesticides, they can rub off on you when you touch the equipment.

   b. If pesticides get on you, they can hurt you. They can cause skin rashes or burns, go through your skin and into your body and make you ill, burn your eyes or make you ill if you get them in your mouth.

   c. When working with pesticides, always wear protective clothing and eye protection, especially when mixing solutions. This is the time when you are handling undiluted chemicals.

   d. Be sure to clean the inside and outside of equipment when you've completed the days work or if you are changing chemicals.

   e. Always rinse or clean spraying equipment in a proper location and dispose of all liquids properly (i.e., use rinse out tank).

   f. Always triple rinse and punch holes in the bottoms of pesticide containers when the containers are empty.

   g. You should not let pesticides stay on your hands or other body parts.

   h. Wash your hands as soon as you finish handling pesticides or pesticide equipment.

   i. Wash your hands BEFORE eating, drinking, chewing gum, using tobacco, or using the toilet.

   j. Wash or shower with soap and water, shampoo your hair, and put on clean clothes after work.

   k. Wash work clothes which may have pesticides on them separately from other clothes before wearing them. Run the washing machine through one cycle empty before washing other clothes.

4. Report all accidents to your supervisor immediately.

SAFETY FOR GROUNDS PERSONNEL

1. Equipment Care and Maintenance
2. Check all equipment before using: for frays in cords, condition of belts, etc.
3. Do not leave equipment unattended while plugged in
4. Watch for people in area while using machinery
5. Reporting Accidents
6. Report all accidents to your supervisor immediately
7. Accident report needs to filled out in detail of how injury occurred, and body parts affected to ensure coverage under workers comp.

CHAINSAW SAFETY

1. Safe Operation
   a. Read and follow instructions
   b. Inspect before using
   c. Ensure proper fuel/oil ratio
   d. When re-fueling, no smoking or fueling a hot saw
   e. Gas should be stored in approved safety container
   f. Use PPE
   g. Wear long pants
   h. No jewelry
   i. Steel-toed shoes
   j. Wear gloves, eye & face shield, hearing protection
2. Safety Tips
   a. Should only drop start in certain conditions
   b. Don't carry on your shoulder
   c. Carry with blade facing toward the back in case of fall
   d. Pull starter cord away from body, and don't wrap cord around you hand
   e. When working in tree - use rope to pull saw up when in place - don't climb with saw
   f. Trim brush and undergrowth first
   g. Be Aware of surroundings - people, objects
   h. When saw is in operation - maintain 6 ft distance from others
   i. Use two hands to control saw (help prevent kickbacks)
   j. Steady base, spread feet apart

MOWER SAFETY

1. General Safety
   a. If have to get off - set brake and shut off
   b. If checking chute - shut mower off

c. Check guards, belts, and fluids daily
d. Use safety approved gas cans - don't add gas with the engine running
e. Use appropriate gas in mower/tractor
f. When mowing around walks, driveways and roads - always throw grass away from
g. Never leave a running mower unattended
h. When mowing, always check unfamiliar areas for objects
i. PPE
j. Wear kidney belts when mowing
k. Wear earmuffs, goggles, glasses, dust mask and safety helmet
l. Walk Behind Mowers
m. Never cut up/down grades - cut across - slip hazard
n. Operate mower in a forward position - don't pull back toward feet

2. Ride On Mower
   a. When transporting - tie mower down with chains
   b. Look behind you before backing up
   c. Follow the rules of the road
   d. Be aware of your surroundings (people, objects, etc)
   e. Don't use your hands to clear the mower of obstructions
   f. Be aware of loose dirt/gravels - disengage blades
   g. Cut up/down grade - not across - could tip
   h. If you feel the grade is too steep, outriggers should be used
   i. Watch out for obstructions
   j. Use care when mowing around trees (low branches)

OFFICE SAFETY

Accidents can happen in the office. Few office workers realize that they are twice as likely to be injured in a fall as a non-office worker. Nationally, only automobile accidents outnumber falls as the leading cause of all accidents. In the office slips, trips and falls are the number one cause of disabling injuries.

Thinking and working safely can prevent most accidents. You can become aware of the most common hazards in the office environment. The following are some examples of common hazards and what you can do to prevent them from becoming accidents.

1. Don't lean back in your chair. Keep all legs on the floor so that you do not end up on the floor. Take time to reach out and hold on to the chair as you sit down. Be sure that the chair is beneath you as you sit.
2. Keep the floor and walkway clear of electrical, telephone and computer cables, boxes, etc.
3. Close one drawer in a filing cabinet before opening another. This prevents the file cabinet from tipping over on you.

4. Close the drawer in your desk before getting up and close file drawers before walking away from the file cabinet. This prevents the danger of people walking into an open file drawer or desk drawer.
5. Store supplies inside cabinets, not on top of them. Store heavy items in lower drawers or on low shelves.
6. Watch out for slippery surfaces. Spilled drinks or water from umbrellas are typical hazards and need to be cleaned up immediately.
7. Look where you are going. Don't block your view by carrying loads higher than eye level.
8. Don't read while walking. It doesn't save enough time to justify the risk.
9. Walk, do not run.
10. Don't climb on chairs, desks or boxes. Use a step ladder.
11. Hold onto handrails when using stairways.
12. Use elevators when carrying boxes if they are available.
13. Don't throw matches, ashes or cigarette butts into wastebaskets.
14. Don't overload wall sockets and extension cords.
15. Don't touch electrical switches, sockets, plugs, etc with wet hands.
16. Don't eat or drink at a computer station. It could result in malfunction of the computer if something is spilled.
17. Watch for unsafe conditions such as defective equipment, burned out lights, loose steps, torn carpet, etc and report them to your supervisor immediately.

OSHA "Right to Know" Hazardous Communications

1. Agency Requirements
    a. OSHA enforces Hazard Communication standards
    b. All containers must be labeled - especially when pouring in a secondary container
    c. SDS's are required for all chemicals
    d. Product Labels - should contain
    e. Precautionary statements
    f. Hazards/Cautions/Warnings
    g. Explanation of how to handle safely
    h. Medical treatment required
    i. How to store and dispose of products
    j. Color coding on labels
    k. Blue - represents health hazards
    l. Red - represents flammability
    m. Yellow - represents reactivity (The higher the #, the more hazardous the material)
    n. Oxidizers - can make other materials more flammable
    o. Corrosive - eat away skin/weaken steel
    p. Carcinogenic - increases the risk of cancer
    q. W - dangerous if comes in contact with water
2. SDS Contents
    a. Section 1 - Name of the produce, name and address of company, how to reach in case of emergency
    b. Section 2 - Lists hazardous ingredients
    c. Section 3 - Lists physical and chemical characteristics - color and odor under regular conditions
    d. Section 4 - Reactivity - Whether product is stable and what to avoid mixing with it
    e. Hazardous Data section - signs/symptoms of over exposure, how chemicals can enter body, 1st aid steps listed
    f. Special protection section - lists special equipment/clothing necessary to use product
    g. Special precautions - lists safe handling and storage
3. Important Tips
    - Read all labels
    - Don't mix chemicals
    - Thoroughly rinse buckets, etc, after using chemical
    - Don't inhale
    - Flush drains before and after dumping chemical