

## INTRODUCTION

There is nothing more important, more valuable, to this department than the health and well-being of its employees. Through policies and training, we want to ensure that the working environment is as safe and free from hazards as it possibly can be and that our employees have the right tools and equipment to allow them to do their job safely and efficiently.

Safety must come first, no matter how urgent the job. No job is worth the life or limb of an employee. A healthy and safe work environment for all employees and contractors is essential for the success of our School, as well as our families and communities. On-the-job safety is just as important as at-home safety, and vice versa. Most, if not all accidents are preventable through the application of proper training, planning, knowledge, and resources to identify and control safety risk.

Safety is everyone's responsibility. All employees are expected and required to be alert for workplace hazards and to immediately report any hazards or injuries to their supervisor. All Facilities Department employees are *explicitly authorized* to stop work immediately and report to their supervisor if they become aware of an uncontrolled workplace hazard. Work will not resume until the hazard is controlled or eliminated.

If, at any time, you are unclear about a safety procedure or policy outlined in this manual or given to you in training, do not proceed with work until you have asked a supervisor for additional clarification. We cannot know what you don't know and you should make no assumptions that your fellow employees understand the procedure or policy any better than you do. Speak up and ask questions.

The policies and procedures in this handbook are compulsory; all department employees and facilities contractors working at St. Paul's School are expected to abide by them at all times. However, they cannot anticipate all conditions. Common sense is your most important safety tool – but like any other piece of safety equipment, it only works if you are using it.

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101.01	<b>SAFETY TRAINING &amp; EDUCATION</b>
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Approved by:	<b>Ben Jorgensen, Director of Facilities Operations &amp; Engineering</b>

**Purpose:**

The Facilities Department is committed to instructing all employees in safe and healthy work practices and will provide training to each employee with regard to general, acceptable, safety procedures and to any hazards or safety procedures that are specific to that employee's work situation.

**Procedure:**

The necessary training will occur:

- Upon Hiring
- Whenever management believes additional training is warranted
- When an employee is given a new job assignment
- When new substances, equipment, or new procedures are introduced which represent a new hazard
- When management is made aware of a new hazard

Employee training will consist of new employee orientation, periodic group meetings, and one-on-one training. The safety and health training provided to employees will include:

- Employee Safety Handbook
- First Aid
- Incident Reporting
- Hazard Communication
- Hazardous Material Spill Response
- Personal Protective Equipment requirements
- Emergency Procedures
- Housekeeping
- Machine safety and machine guarding
- Job Specific Hazards
  - Asbestos Awareness
  - Blood Borne Pathogen
  - Lead Based Paint Awareness

102.01	<b>SAFETY AND HEALTH COMMUNICATIONS</b>
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**Reporting of Safety and Health Hazards:**

The Facilities Department has an expectation of all employees that they will immediately report any uncontrolled workplace hazard or unsafe condition to a supervisor.

**Postings:**

Postings required by state and federal law (for example, Safety and Health protection on the Job, state OSHA citations and responses, etc.) will be prominently displayed in designated employee work areas.

**Training:**

The Facilities Department has training requirements designed to instruct each employee on general safety procedures as well as safety procedures specific to the employee's job. These training requirements are described in greater detail in policy 101.01, Safety Training and Education.

**Employee Safety Handbook:**

All employees will be provided with their own copy of the Employee Safety Handbook. During their initial probationary period, they are to read the handbook and acknowledge its receipt by their signature on a written record maintained by the Environmental Health and Safety Manager. Subsequent updates and new policies will be provided to employees for the maintenance of their Safety Handbook.

A copy of the Safety Handbook will also be kept current on the SPS Millville site under "Safety"

103.01	<b>EMPLOYEE RESPONSIBILITIES &amp; RIGHTS</b>
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**Purpose:**

All employees will comply with the provisions of the Occupational Safety and Health Act of 1970. Therefore, any employee who, knowingly commits an unsafe act or creates an unsafe condition, disregards the safety policy, or is a repeated safety or health offender, will be subject to disciplinary action, up to and including termination. Grounds for immediate termination are:

- 1) Drinking alcohol, and/or using recreational drugs prior to or during working hours
- 2) Fighting or bullying
- 3) Failure to wear required Personal Protective Equipment (PPE).
- 4) Removing and/or making inoperative safety guards on tools and equipment
- 5) Unauthorized removal of barriers and guardrails
- 6) Failure to follow recognized industry safety practices
- 7) Engaging in dangerous horseplay
- 8) Failure to notify a supervisor of an uncontrolled hazardous situation

**YOUR SAFETY RIGHTS**

You have several important rights concerning safety, which are protected by federal, state and local laws that you should be aware of. They are:

- The right to a safe work-place free from recognized hazards.
- The right to request information on safety and health hazards in the workplace, precautions that may be taken, and procedures to be followed if an employee is injured or exposed to toxic substances.
- The right to know about the hazards associated with the chemicals you work with, and the safety procedures you need to follow to protect yourself from those hazards.
- The right to question any instruction which requires you to disobey a safety rule, which puts you or someone else in unnecessary danger of serious injury, or requires you to perform a task which you have not been trained to safely perform.
- The right of freedom from retaliation for demanding your safety rights.

104.01	<b>First Aid and Medical Treatment</b>
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**Purpose:**

The purpose of this policy is to instruct employees on the proper procedures when calling for medical assistance if involved in a workplace accident, injury or medical condition.

**Procedure:**

Emergency medical services can be contacted by dialing 9-1-1 on any campus phone or cell phone. Do not hesitate to contact emergency services in the event of an accident or injury. SPS Security can also be reached 24 hours a day by two-way radio on channel 3 or by calling x4646 on any campus phone, or 229-4646 on a cell phone. If time permits, a call to Safety and Security following a call to 9-1-1 will get assistance to the location in a timely manner.

First Aid kits are available in many locations for employee use for treating minor injuries or illnesses. Ask your supervisor for the location of the nearest First Aid kit and immediately report kits that are missing or depleted of supplies to Shipping and Receiving.

**All workplace injuries, no matter how minor, must be reported to your supervisor as soon as possible.**

105.01	<b>GENERAL SAFETY RULES &amp; GUIDELINES</b>
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Purpose:

This policy is intended to describe basic safety rules that are to be followed by all St. Paul's Facilities Department employees.

It is impossible to list or include all safety rules for all the possible tasks you may have to do. But the following general rules have been prepared to help you avoid hazards, which may cause injury while doing some of the more common tasks you may be asked to do. You should study and follow the rules provided in this manual. Ask your supervisor for additional rules when required to do a task you are not familiar with, and this booklet does not cover. Failure to follow safety rules and /or safe practices will result in disciplinary action, up to and including termination.

GENERAL SAFETY RULES:

- Read and follow the safety notices and other information that is posted.
- Observe and follow all safety instructions, signs, and operating procedures.
- Help your fellow employees when they ask for assistance or when needed for their safety.
- Never participate in "horseplay". Horseplay that results in injury is often not covered by Workers' Compensation and as mentioned in policy 103.01, may be grounds for immediate termination.
- Clean up small spills immediately. Report large spills immediately.
- Report all unsafe conditions, hazards, or equipment immediately. Make sure other people are warned of the problem so that they may avoid it.
- Wear personal protective equipment as required to reduce injuries. Use gloves, safety glasses, head protection, hearing protection, back support belts, etc., as necessary and when required.
- Never stand on chairs, furniture, or anything other than an approved ladder or step stool.
- Never use intoxicating beverages or recreational drugs before or during work. Prescription medication should only be used at work with your Doctor's approval.

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- Always wear seat belts when operating vehicles so equipped.

#### FIRE SAFETY:

- Report all fire hazards to your supervisor immediately.
- Firefighting equipment shall be used only for firefighting purposes.
- Smoking is not permitted on the School grounds or in School buildings at any time.
- Do not block access to firefighting equipment.
- Keep doors, aisles, fire escapes and stairways unobstructed at all times.
- In the case of a fire, your first consideration must be the safety of all persons, and then attention should be directed to the protection of property.
- Change clothes immediately if they are soaked with oil, gasoline, and paint thinner or any other flammable liquid.
- Know how to report a fire and how to activate a fire alarm system.
- Know the fire exits to be used in an emergency.
- Do not use door chocks to hold open doors that have self-closing devices. In general, most doors equipped with a self-closing device are a required part of a buildings passive fire protection feature and should not be held open to prevent closing.
- Unless you have been specifically instructed in how to use a fire extinguisher and told when to use one as part of your job, you should make no attempt to stay and fight a fire with a portable extinguisher. Sound the alarm and evacuate the building immediately.

#### HAND TOOL SAFETY:

- Wear protective equipment necessary for the job you are performing. Discuss any required safety equipment with your supervisor as changes occur.
- Defective or broken tools must not be used.
- Do not carry sharp hand tools in clothing.



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- Check all wiring on electric hand tools for proper insulation and 3-prong plug grounding.
- **Hammers:** Use eye protection at all times!
- **Screwdrivers:** Use the right size and type of screwdriver for the job. Do not use a screwdriver as a chisel.
- **Wrenches:** In using any wrench, it is better to pull than to push. If you have to push, use your open palm. Use the proper wrench for the job.
- **Handsaws:** Saws that are sharp and rust free are less likely to bind or jump. Insure the object being cut is secured tightly.

#### PROTECTIVE EQUIPMENT:

- Approved eye protection (safety glasses with side shields, goggles, etc.) must be worn at all times when required by the work you are doing. It is important to check with your supervisor to assure compliance.
- Moccasins and shoes with open toes or high heels are not permitted except for employees assigned full time to an office.
- Wear protective clothing and equipment as required by your job classification to protect against hazards at hand. These include, but are not limited to, hard hats, steel toed shoes, gloves, fall safety harnesses, hearing protection, etc.
- Clean, maintain and inspect all necessary protective equipment immediately after use.

#### MATERIAL HANDLING SAFETY RULES:

- When lifting, lift properly. Keep the back straight, stand close to the load, and use your leg muscles to do the lifting, keeping the load close to the body. Never twist your upper body while carrying a load.
- When lifting heavy objects, utilize a two-wheeled dolly, or, ask for assistance from another employee.
- Inspect the object you are going to lift for sharp corners, nails, black widow spiders, or other things that may cause injury.

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- Use gloves when handling rough or sharp materials.

HOUSEKEEPING:

- Do not place materials in aisles, stairways, or any designated path of travel.
- Stack material at a safe height so that material will not fall if bumped. Insure heavy loads have proper support, and make sure there is no overhanging or irregular stacking of material.
- Place all trash or scrap in places provided. Clean up all spills immediately.
- Report worn or broken flooring, stair treads, handrails, furniture, or other office equipment.

106.01	<b>PREVENTION &amp; CONTROL OF WORKPLACE HAZARDS</b>
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Policy:

Section 19(a) of the Occupational Safety and Health Act (OSHA) requires that employees be provided with a safe and healthful place of employment. Identification of hazardous conditions may be accomplished at the planning and design stage, as a result of workplace inspections, or by employee reports of existing conditions.

Principles:

Safety and Health Hazards shall be eliminated or controlled by one of the four following methods:

Substitution-

The risk of injury or illness may be reduced by replacement of an existing process, material, or equipment with a similar item having less hazard potential. Some examples include: brush painting instead of spray painting to reduce inhalation hazards, use of safety cans instead of bottles to store flammable liquids, etc.

Isolation-

Hazards are controlled by isolation whenever an appropriate barrier is placed between the hazard and an individual who may be affected by the hazard. Examples include machine guards, electrical insulation, and remote controlled equipment.

Ventilation-

The control of a potentially hazardous airborne substance by ventilation can be accomplished by one of two methods: diluting the concentration of the substance by mixing with uncontaminated air or capturing and removing the substance at its source or point of generation.

Personal Protective Equipment-

The use of Personal Protective Equipment (PPE) is an effective method to minimize or eliminate the potential for injury in the workplace. The employee and employer must be vigilant in care for and maintaining PPE so that it can offer adequate protection and still allow the employee to work effectively.

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#### Application of Hazard Control Principles:

Hazardous conditions in the workplace may be prevented through appropriate actions when facilities are designed, when operating procedures are developed, and when equipment is purchased. Notwithstanding these preventive measures, hazards will arise as a result of the dynamics of the workplace environment. Once hazards are identified, whether through inspection or complaint, immediate action shall be taken to avoid unreasonable danger.

#### 1. Design Reviews

Safety and occupational health issues shall be considered, designed, and engineered into all facilities which are acquired or constructed for use by St. Paul's School employees. To ensure that appropriate hazard control techniques are applied, the Environmental Health and Safety Manager shall participate in the review of plans and specifications for construction and renovation projects. Recommendations shall be submitted in writing after the review.

#### 2. Operating Procedures

Standard operating procedures or similar directives developed by the supervisor that are issued to direct the manner in which work is performed shall include appropriate health and safety requirements. Supervisors are encouraged to submit standard operating procedures to the Environmental Health and Safety Manager for review. Recommendations for changes/additions to the procedures for safety and health purposes shall be submitted in writing back to the originating supervisor.

#### 3. Purchasing Procedures

Many hazards can be avoided by incorporating appropriate specifications for purchased equipment/material and contracted efforts that involve work at School facilities. Lower hazard alternatives will always be considered at the time of purchase.

#### 4. Interim Hazard Abatement Measures

During the time needed to design and implement permanent hazard control measures, immediate, temporary measures may be needed.

#### 5. Permanent Hazard Abatement.

Engineering control methods are the preferred method of hazard control, followed by administrative control and personal protective equipment. Feasible engineering controls shall be used to reduce hazardous exposure, even when only partial reduction of exposure is possible through engineering methods.

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#### Development of Hazard Control Recommendations:

The following possible actions will be considered when recommendations are developed for prevention or reduction of hazards:

1. Avoiding, eliminating, or reducing deficiencies by engineering design, material selection or substitution;
2. Isolating hazardous substances, components, and operations from other activities, areas, personnel, and incompatible materials;
3. Incorporating "fail-safe" principles where failures would disable the system or cause a catastrophe through injury to personnel, damage to the equipment, or inadvertent operation of critical equipment;
4. Relocating equipment/components so that personnel access during operation, maintenance, repair or adjustment shall not result in exposure to hazards such as chemical burns, electrical shock, electromagnetic radiation, cutting edges, sharp points, or toxic atmospheres;
5. Providing suitable warning and notes of caution concerning required personnel protection in operation, assembly, maintenance, and repair instructions;
6. Providing distinctive markings on hazardous components, equipment, or facilities;
7. Requiring use of personal protective equipment when other controls do not reduce the hazard to an acceptable level;
8. Monitoring exposure to insure that engineering controls effectively reduce the hazard; and
9. Training employees to recognize hazards and take appropriate precautionary measures.

#### Hazard Reporting:

Identification and reporting of potentially unsafe or unhealthful working conditions is the responsibility of all Facilities Department employees. All employees are encouraged and expected to report unsafe or unhealthful working conditions to their immediate supervisor who will promptly investigate the situation and take appropriate corrective actions. Supervisors will contact the Environmental Health and Safety Manager for assistance as necessary.

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Any employee may submit a written notification of an unsafe or unhealthful working condition directly to the Environmental Health and Safety Manager or Facilities Director. All hazard reports will be thoroughly investigated.

The Environmental Health and Safety Manager or Facilities Director will provide a response in writing to the originator of the report of hazard in a timely manner. If the investigation validates the reported hazard, the complete response shall include a summary of the action taken for abatement. If no hazard is found to exist, the reply shall include the basis for that determination.

If the originator of the report of a hazardous condition is dissatisfied with the assessment of the alleged hazard made by the Facilities Department, he or she is encouraged to contact the Director of Human Resources for additional assistance.

**Employees must immediately report any unsafe condition or unsafe practice. No employee will be disciplined or discharged for reporting any workplace hazard or unsafe condition. Conversely, *failure* to report any obvious workplace hazard or unsafe situation may result in disciplinary action, up to and including termination.**

107.01	<b>HAZARD COMMUNICATIONS (HAZCOM)</b>
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The SPS Facilities Operations & Engineering Department complies with the OSHA Hazard Communications Standard, Title 29 CFR 1910.1200, by using Material Safety Data Sheets (MSDS), by compiling a Hazardous Chemicals List, by insuring that containers are labeled, and by providing each employee with training.

This program applies to all work operations in Facilities Department where the employee may be exposed to hazardous substances under normal working conditions or during emergency situations.

The Environmental Health and Safety Manager is the individual who has overall responsibility for the program. The Environmental Health and Safety Manager will review and update the program as necessary.

Under this program, each employee will be informed of the contents of the Hazard Communication Standard, the hazardous properties of chemicals which they will use, safe handling procedures, and measures to be taken to protect themselves from these chemicals. Employees will also be informed of the hazards associated with chemicals in unlabeled pipes.

### **List of Hazardous Chemicals & Material Safety Data**

The Environmental Health and Safety Manager will make a list of all hazardous chemicals and related work practices used in the department and will update the list as necessary. This list will be made available to any employee upon request. The Material Safety Data Sheet (MSDS) for every chemical used at the School is maintained in an online format and can be accessed by clicking on the "Safety" tab located on the School's Millville intranet site. This will take you to the SPS MSDSOnline site where you can search either the SPS-specific database or the much larger MSDSOnline database for information on nearly any chemical or product. In the event that access to the remote site is unavailable, SPS Security carries a backup file of the School's MSDS database. Hardcopy MSDS records can also be retrieved for any employee by request to the employee's supervisor or the Environmental Health and Safety Manager.

### **Contract Employees**

The Director, Associate or Assistant Director of Facilities will advise outside contractors in person of any chemical hazards that may be encountered in the normal course of their work on School grounds, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. In addition, these individuals will be instructed in how to access the School's MSDS information online. Each contractor that brings chemicals onto School grounds must provide the School with the appropriate

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hazard information on these substances, including the labels used and the precautionary measures to be taken in working with these chemicals.

### Labels and Other Forms of Warning

Supervisors will insure that all hazardous chemicals in the work place are properly labeled and updated as necessary. Labels should list at least the chemical's identity, appropriate hazard warnings, and the name, and address of the manufacturer, importer, or other responsible party. As needed, they will refer to the corresponding MSDS to assist in verifying label information. Labels are required on all portable containers containing hazardous materials.

### Non-Routine Tasks

When employees are required to perform hazardous, non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.), a special training session will be conducted to inform them of any hazards they may encounter, along with the precautions to take to reduce and avoid exposure or danger. This training will take place prior to the anticipated work being performed.

### Training

Everyone who works with or is potentially exposed to hazardous chemicals will receive initial training on the Hazardous Communication Standard and the safe use of those hazardous chemicals. Whenever a new chemical or hazard is introduced, additional training will be conducted to address the new hazard and protective measures to be taken.

The training plan will emphasize these components:

- Summary of the standard and this written program.
- Chemical and physical properties of hazardous materials (e.g., flash point, reactivity, etc.) and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes).
- Physical hazards of chemicals (e.g., potential for fire, explosion, etc.), health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical.



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- Procedures to protect against hazards (e.g. personal protective equipment required, proper use and maintenance, work practices, methods to assure the proper use and handling techniques, and procedures for emergency response).
- Work procedures to follow to assure protection when cleaning small spills and leaks.
- Where MSDS are located, how to read and interpret information on both labels and MSDS and how employees may obtain additional hazard information.

108.01	<b>CARPENTRY AND LUMBER HANDLING &amp; STORAGE SAFETY</b>
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**Policy:**

Personnel performing duties in carpentry and lumber handling are exposed to a wide variety of hazards in different environments and locations. Hazards include exposures to flammable and combustible adhesives, dusts, hazardous noise, eye injury, and working at heights above ground level, lifting injuries, electric and pneumatic power tools, and working with unfinished material which could expose them to lacerations and puncture wounds. Many tasks are performed in areas of high pedestrian traffic; therefore, an additional hazard of possible distraction from the job task arises. Potential physical and health hazards can be effectively controlled by proper work procedures and controls, and by using required personal protective equipment.

**Procedures:**

Personal protective equipment worn while operating machinery, equipment, and saws within the shop and on job sites normally consists of eye protection, safety-toe shoes, and hearing protection. Another safety related (PPE) is a dust mask when workers are exposed to dust at the point of operation. The Safety and Health Manager shall be consulted to determine the need for dust masks.

Hard hats are required on job sites where the potential exists from being struck by falling object(s), e.g., roofing and construction.

In addition to the safety practices found in this policy, workers shall also consult the Machinery and Machine Guarding policy.

Workers shall not leave a woodworking machine running unattended nor shall they attempt to clear, clean, or repair the machine while it is operating.

When maintenance is necessary, the machine shall be completely shut down, its control switches locked and tagged in the "OFF" position.

Supervisors shall ensure that periodic inspections are accomplished on all shop equipment.

Chips or dust shall never be removed from machinery by hand. Machine guards shall not be removed or made inoperative except for authorized maintenance. When guards are removed during machine repair, power control switches shall be locked in the "OFF" position and properly tagged. The machine shall remain locked until the guards are replaced.

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### Safety Precautions:

#### Table Saw Operations-

- a. Keep hands out of the line of cut when feeding table saws. Use a push stick when close to the blade.
- b. Adjust saw to expose the least amount of saw blade necessary to complete the intended cut.
- c. Always stand out of line of stock being ripped.
- d. Always use the appropriate saw for the cut (it would be unsafe to rip with a crosscut saw or to crosscut with a rip saw).
- e. Avoid crosscutting long boards on a table saw.
- f. Never adjust the saw or fence gauge while the saw is energized.
- g. Designate the line of cut on the table top with a permanent mark when setting the gauge of a table saw without removing the guards.
- h. Always use a brush or stick to clean or scrape sawdust from a saw.

### Ventilation Systems:

#### Application-

Machines that develop fine dust or other airborne contaminants shall be equipped with effective industrial exhaust ventilation. In shops where small numbers of installed machines are not continuously in operation, portable collection systems may be used.

#### Exhaust Ducts and Pipes-

These shall be constructed and sized to minimize clogging. They shall discharge into an enclosed container.

#### Refuse-

Refuse shall be removed daily in all operations that are not required to have an exhaust system or where the refuse cannot be handled by an exhaust system.

### Storage and Handling of Lumber:

Storage areas for lumber and other building materials can be potentially hazardous. For example, when lumber is stored upright, precautions shall be taken to prevent it from falling into aisles or passageways. Lumber stored in tiers shall be stacked, blocked, and interlocked and the stacks shall be limited in height so they are stable and secure against sliding or collapse. Furthermore, storage areas shall be kept free of accumulations of materials that constitute tripping, fire, or explosion hazards.

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When heavy stock cannot be safely handled by workers, suitable mechanical lifting devices shall be used.

Gloves shall be worn by workers to reduce injury potential to the hands from splinters or from being pinched between the stacks. The accidental movement of the stacked material can cause serious injuries. Caution shall be taken not to disturb other tiers when removing partial stacks for use.

Manual handling is relatively safe if the proper lifting and carrying positions are used. Balanced handling is the key to safe handling.

109.01	<b>PERSONAL PROTECTIVE EQUIPMENT (PPE)</b>
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**Purpose:**

The purpose of this program is to protect our employees by ensuring that Personal Protective Equipment (PPE) is provided, used, and maintained in a sanitary and reliable condition. To the extent that it is possible and feasible, the Facilities Department will remove or eliminate hazards or exposures through engineering means to eliminate the need for PPE first.

This policy covers eye and face protection, head protection, foot protection, hand protection, hearing protection and electrical protection. Respiratory hazards are covered by other policy, but they will also be included in the Hazard Assessment described below. This program covers the responsibilities of managers, supervisors and workers, the assessment of hazards, the selection and use of PPE, and training.

**Policy:**

Protective clothing will be provided whenever it is necessary by reason of hazards, processes or environmental conditions. The Facilities Department requires that appropriate protective equipment be used when workplace hazards are encountered.

**References**

20 CFR 1910.132 Subpart I - Personal Protective Equipment

**Responsibilities:**

The job site supervisor will be responsible for assessing the hazards and exposures that may require the use of PPE, determining the type of equipment to be provided, and requisitioning the equipment. Input from managers, supervisors, and employees will be obtained and considered in selecting appropriate equipment. Additional support or guidance may also be available from the Environmental Health and Safety Manager.

Managers/supervisors will be responsible for training employees in the use and proper care of PPE, ensuring that all employees are assigned appropriate PPE, and ensuring that PPE is worn by employees when and where it is required.

Employees are responsible for following all provisions of this program and related procedures. They are expected to wear PPE when and where it is required. Employees are also responsible for the inspection and maintenance of their PPE.

**Procedures:**

- a. Protective clothing and/or equipment must be worn by the employees and visitors as dictated by Facilities Department policy.

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- b. Requests for all personal protective clothing not available as Facilities Department stock items are generated by the supervisor and are approved by the Director or Assistant Director.
- c. Personal protective clothing may not be worn in the cafeteria or other food consumption areas, conference rooms, picnic areas or off campus.
- d. Sandals, and open-toed shoes, are prohibited, except in office environments
- e. Hard hats should be worn in all posted areas (e.g., locations in warehouses, shops, and building construction or renovation areas) and when performing work in which the supervisor and/or Environmental Health and Safety Manager decides such hazards exist.

#### Hazard Assessment:

The Facilities Department will perform an assessment of the workplace or task to determine if hazards are present, or likely to be present, which necessitate the use of personal protective equipment (PPE). This assessment will consist of a survey of the workplace or task to identify sources of hazards to workers. Consideration will be given to hazards such as impact, penetration, laceration, compression (dropping heavy objects on foot, roll-over, etc.), chemical exposures, harmful dust, heat, light (optical) radiation, electrical hazards, noise, etc. Where such hazards are present, or likely to be present, the Facilities Department will:

- Select, the types of PPE that will protect the employee from the hazards identified.
- Communicate equipment selection decisions to each affected employee
- Select PPE that properly fits each affected employee
- Train employees in the use and care of PPE as described elsewhere in this program

The Facilities Department will verify that the workplace hazard assessment has been performed by completing a written certification. This certification will be dated and signed by the Safety Coordinator or person conducting the assessment. Whenever there is a change in process or in the workplace that might introduce or change an exposure or hazard, the Facilities Department will perform an assessment to determine if there needs to be additional PPE or a change in the PPE provided. These supplemental hazard assessments will also be documented, signed and dated by the person performing the assessment. The Facilities Department will review and update the workplace hazard assessment on an annual basis.

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#### SELECTION OF PERSONAL PROTECTIVE EQUIPMENT (PPE):

Personal protective equipment (PPE) will be selected on the basis of the hazards to which the workers' are exposed or potentially exposed. All selections will be made with input from managers, supervisors and workers.

Personal protective equipment will meet the following standards:

- Eye & Face Protection devices - ANSI Z87.1-1989 "American National Standard Practice for Occupational and Educational Eye and Face Protection"
- Head Protection devices - ANSI Z89.1-1986 "American National Standard for Personal Protection - Protective Headwear for Industrial Workers"
- Foot Protection devices - ANSI Z41-1991 "American National Standard for Personal Protection - Protective Footwear"
- Hand Protection - No national standard available - Selection will be based on task performed, conditions present, duration of use, and the hazards and potential hazards identified.
- Electrical Protective equipment – NFPA 70E

#### Payment:

Personal protective equipment (PPE), used to comply with 29 CFR 1910.132 and/or 29 CFR 1926.95, shall be provided by the Facilities Department at no cost to employees. If an employee loses or damages their PPE, either through neglect or purposefully, replacement at the expense of the employer (SPS) is not required.

#### Training:

Each employee who is required to use PPE will be trained in the following:

- Why PPE is necessary
- When PPE is necessary
- What PPE is necessary and any alternative choices of equipment
- How to properly don, doff, adjust, and wear PPE
- The proper inspection, care, maintenance, storage, useful life, and disposal of PPE

PPE training will include an opportunity for employees to handle the PPE and demonstrate that they understand the training and have the ability to use the PPE properly. Training will be provided by the manager or supervisor of the affected

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employees. Training will be documented in writing with the documentation including the names of each employee trained, the date(s) of the training, and the subject matter covered.

If an employee, who has been trained, demonstrates a lack of knowledge or behavior which leads the supervisor to believe the employee does not have a proper understanding of the PPE involved, that employee will be retrained. If there are changes in the workplace or processes that change the exposures or type of PPE to be used, all affected employees will be retrained.

#### Care of Personal Protective Equipment:

Whenever practical, PPE will be assigned to individual workers for their exclusive use. Employees will be responsible for the PPE equipment assigned to them or used by them.

PPE will be regularly cleaned, inspected and stored according to instructions given during the training sessions or as directed by supervisors or managers. Defective or damaged PPE shall not be used. Employees are to report any defective or damaged equipment to their supervisor for repair or replacement.

#### Personal Protective Equipment:

Engineering controls shall be the primary methods used to eliminate or minimize hazard exposure in the workplace. When such controls are not practical or applicable, personal protective equipment shall be employed to reduce or eliminate personnel exposure to hazards.

Personal protective equipment (PPE) will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injuries and/or illnesses. The Environmental Health and Safety Manager (EH&S Manager) will recommend and/or provide necessary protective equipment where there is a reasonable probability that the use of the equipment will prevent or reduce the severity of injuries or illness.

#### Equipment Specifications and Requirements-

All personal protective clothing and equipment will be of safe design and construction for the work to be performed. Only those items of protective clothing and equipment that meet National Institute of Occupational Safety and Health (NIOSH) or American National Standards Institute (ANSI) standards will be procured or accepted for use.



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#### Eye and Face Protection-

The majority of occupational eye injuries can be prevented by the use of suitable/approved safety spectacles, goggles, or shields. Approved eye and face protection shall be worn when there is a reasonable possibility of personal injury. Supervisors, with assistance from the EH&S Manager, determine jobs and work areas that require eye protection and the type of eye and face protection that will be used.

Typical hazards that can cause eye and face injury are:

- Splashes of toxic or corrosive chemicals;
- Flying objects, such as chips of wood, metal, and stone dust;
- Fumes, gases, and mists of toxic or corrosive chemicals; and
- Aerosols of biological substances.

Prevention of eye accidents requires that all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, researchers, contractors, or others passing through an identified eye hazardous area. To provide protection for these personnel, Facilities shall procure a sufficient quantity of heavy duty goggles and/or plastic eye protectors which afford the maximum amount of protection possible.

If these personnel wear non-safety personal glasses, they shall be provided with a suitable eye protector to wear over them.

#### Specifications-

Eye and face protectors procured, issued to, and used by Facilities Department personnel must conform to the following design and standards:

- a) Provide adequate protection against the particular hazards for which they are designed
- b) Fit properly and offer the least possible resistance to movement and cause minimal discomfort while in use.
- c) Be durable.
- d) Be easily cleaned or disinfected for or by the wearer.
- e) Be clearly marked to identify the manufacturer.

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f) Persons who require corrective lenses for normal vision, and who are required to wear eye protection, must wear goggles or spectacles of one of the following types:

- 1) Spectacles with protective lenses which provide optical correction.
- 2) Goggles that can be worn over spectacles without disturbing the adjustment of the spectacles.
- 3) Goggles that incorporate corrective lenses mounted behind the protective lenses.

#### Description and Use of Eye/Face Protectors

Safety Spectacles. Protective eye glasses are made with safety frames, tempered glass or plastic lenses, temples and side shields which provide eye protection from moderate impact and particles encountered in job tasks such as carpentry, woodworking, grinding, scaling, etc.

Single Lens Goggles. Vinyl framed goggles of soft pliable body design provide adequate eye protection from many hazards. These goggles are available with clear or tinted lenses, perforated, port vented, or non-vented frames.

Single lens goggles provide similar protection to spectacles and may be worn in combination with spectacles or corrective lenses to insure protection along with proper vision.

Welders/Chippers Goggles. These goggles are available in rigid and soft frames to accommodate single or two eye piece lenses.

Welder's goggles provide protection from sparking, scaling or splashing metals and harmful light rays. Lenses are impact resistant and are available in graduated shades of filtration.

Chippers/grinders goggles provide eye protection from flying particles. The dual protective eye cups house impact resistant clear lenses with individual cover plates.

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Face Shields. These normally consist of an adjustable headgear and face shield of tinted/transparent acetate or polycarbonate materials, or wire screen. Face shields are available in various sizes, tensile strength, impact/heat resistance and light ray filtering capacity. Face shields will be used in operations when the entire face needs protection and should be worn to protect eyes and face against flying particles, metal sparks, and chemical/ biological splash.

Welding Shields. These shield assemblies consist of vulcanized fiber or glass fiber body, a ratchet/button type adjustable headgear or cap attachment and a filter and cover plate holder. These shields will be provided to protect workers' eyes and face from infrared or radiant light burns, flying sparks, metal spatter and slag chips encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding and oxyacetylene welding and cutting operations.

The stock room maintains a supply of various eye and face protective devices. Personnel requiring prescription safety glasses must contact their supervisor for assistance.

#### Emergency Eyewash Facilities-

Emergency eyewash facilities meeting the requirements of ANSI Z358.1-1981 shall be provided in all areas where the eyes of any employee may be exposed to corrosive materials. All such emergency facilities shall be located where they are easily accessible to those in need.

#### Respiratory Protection-

Employees exposed to nuisance dust shall wear appropriately rated masks. Employees regularly engaged in activities requiring more substantial respiratory protection should consult the Respirator Protection Program in the next section.

#### Head Protection-

Hats and caps have been designed and manufactured to provide workers protection from impact, heat, electrical and fire hazards. These protectors consist of the shell and the suspension combined as a protective

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system. Safety hats and caps will be of nonconductive, fire and water resistant materials. Bump caps or skull guards are constructed of lightweight materials and are designed to provide minimal protection against hazards when working in congested areas.

Head protection will be furnished to, and used by all SPS employees engaged in construction and other miscellaneous work in head-hazard areas. Head protection will also be required to be worn by engineers, inspectors, and visitors at construction sites. Bump caps/skull guards will be issued to and worn for protection against scalp lacerations from contact with sharp objects. They will not be worn as substitutes for safety caps/hats because they do not afford protection from high impact forces or penetration by falling objects.

#### Hand Protection-

Skin contact is a potential source of exposure to toxic materials; it is important that the proper steps be taken to prevent such contact. Gloves should be selected on the basis of the material being handled, the particular hazard involved, and their suitability for the operation being conducted. One type of glove will not work in all situations.

Most accidents involving hands and arms can be classified under four main hazard categories:

- chemicals
- abrasions
- cutting
- heat

There are gloves available that can protect workers from any of these individual hazards or any combination thereof.

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical container labels and MSDSs before working with any chemical. Recommended glove types are often listed in the section for personal protective equipment.

All glove materials are eventually permeated by chemicals. However, they can be used safely for limited time periods if specific use and glove characteristics (i.e., thickness and permeation rate and time) are known.

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The Environmental Health and Safety Manager can assist in determining the specific type of glove material that should be worn for a particular chemical.

Gloves should be replaced periodically, depending on frequency of use and permeability to the substance(s) handled. Gloves overtly contaminated should be rinsed and then carefully removed after use. If decontamination is impractical or not possible, the contaminated gloves should be disposed of and the immediate supervisor shall be notified.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The types of glove materials to be used (in these situations) include leather, welder's gloves, aluminum-backed gloves, and other types of insulated glove materials.

Careful attention must be given to protecting your hands when working with tools and machinery. Power tools and machinery must have guards installed or incorporated into their design that prevent the hands from contacting the point of operation, power train, or other moving parts.

The Environmental Health and Safety Manager can help the supervisor identify appropriate glove selections for their operations. The Stock room also maintains a selection of gloves for various tasks.

### Hearing Personal Protective Equipment

Hearing protective devices (ear plugs, muffs, etc.) shall be the permanent solution only when engineering or administrative controls are considered to be infeasible or cost prohibitive. Hearing protective devices are defined as any device that can be worn to reduce the level of sound entering the ear. Hearing protective devices shall be worn by all personnel when they must enter or work in an area where the operations generate noise levels of:

- Greater than 85 dBA continuous sound levels, or
- 120 dB peak sound pressure level or greater

Types of Hearing Protective Devices include the following:

- a. Insert Type Earplugs

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A device designed to provide an air-tight seal with the ear canal. There are three types of insert earplugs – premolded, formable, and custom earplugs.

#### 1. Premolded Earplugs

Premolded earplugs are pliable devices of fixed proportions. Two standard styles, single flange and triple flange, come in various sizes, and will fit most people. Personnel responsible for fitting and dispensing earplugs will train users on proper insertion, wear, and care. While premolded earplugs are reusable, they may deteriorate and should be replaced periodically.

#### 2. Formable

Formable earplugs come in just one size. Some are made of material which, after being compressed and inserted, expands to form a seal in the ear canal. When properly inserted, they provide noise attenuation values that are similar to those from correctly fitted premolded earplugs. Individual units may procure approved formable earplugs. Supervisors must instruct users in the proper use of these earplugs as part of the annual education program. Each earplug must be held in place while it expands enough to remain firmly seated. A set of earplugs with a cord attached is available. These earplugs may be washed and therefore are reusable, but will have to be replaced after two or three weeks or when they no longer form an airtight seal when properly inserted.

#### 3. Custom Molded Earplugs

A small percentage of the population cannot be fitted with standard premolded or formable earplugs. Custom earplugs can be made to fit the exact size and shape of the individual's ear canal. Individuals needing custom earplugs will be referred to an audiologist.

#### b. Earmuffs

Earmuffs are devices worn around the ear to reduce the level of noise that reaches the ear. Their effectiveness depends on an air tight seal between the cushion and the head.

### Selection of Hearing Protective Devices

Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the Environmental Health and Safety Manager. In all cases the chosen hearing protectors shall have a Noise

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Reduction Ratio (NRR) high enough to reduce the noise at the ear drums to 80 dBA or lower.

#### Issuance of Hearing Protective Devices

The issuance of hearing protective devices is handled through the Facilities Department supervisors. Instruction on the proper use and care of earplugs and earmuffs will be provided whenever an employee is unclear on the proper fit and use of a specific type of HPD. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The stock room maintains a supply of HPD available for employees.

#### Use of Hearing Protective Devices

Always use and maintain HPDs as originally intended and in accordance with instructions provided.

Earmuff performance may be degraded by anything that compromises the cushion-to-ear seal. This includes other pieces of personal protective equipment such as eyewear, masks, face shields, and helmets.

#### Maintenance of Hearing Protective Devices

Reusable earplugs, such as the triple flange or formable devices should be washed in lukewarm water using hand soap, rinsed in clean water, and dried thoroughly after use. Wet or damp earplugs should not be placed in their containers. Cleaning should be done as needed.

Earmuff cushions should be kept clean. The plastic or foam cushions may be cleaned in the same way as earplugs, but the inside of the muff should not get wet. When not in use, ear muffs should be placed in open air to allow moisture that may have been absorbed into the cups to evaporate.

#### Personal Audio Devices

The "earbud" earphones used with personal audio devices are NOT considered approved hearing protection and CANNOT be substituted for approved hearing protection equipment when such equipment is required. Personal audio devices with earbuds may only be worn with the permission of your supervisor.

110.01	<b>BLOODBORNE PATHOGENS CONTROL PROGRAM</b>
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### Purpose

The purpose of the bloodborne pathogen standard is to minimize exposure to the Hepatitis B Virus (HBV), the Human Immunodeficiency Virus (HIV), and other potentially infectious material (OPIM). This Exposure Control Plan (ECP) has been developed to comply with the requirements of this standard.

### Exposure Determinations

Below are the listed job classifications where employees could occasionally handle blood or other potentially infectious materials that may result in exposure to possible bloodborne pathogens.

- Building Services Employees
- Maintenance Workers
- Athletic Trainers
- First-Aid Responders
- Health Center Employees
- Life Guards
- Safety and Security Personnel
- Sports Coaches and Assistants
- Faculty

Below are some of the listed tasks and procedures where human blood and other potentially infectious materials could be handled.

- Bed Changing
- Cleaning Blood Spill
- Soiled Linen Handling
- Cleaning Students' Rooms, Bathrooms, and Toilets in all Buildings
- Trash Handling
- Equipment Handling



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### **Methods of Control**

Universal precautions are observed at this facility. All blood, body fluids, and other potentially infectious materials are considered infectious regardless of the perceived status of the source individual.

### **Engineering and Work Practice Controls**

In work areas where a possibility of occupational exposure exists, employees should refrain from eating, drinking, applying cosmetics, and handling of contact lenses.

Employees should thoroughly wash hands immediately after coming into contact with blood or other infectious materials. This should be done even if gloves were worn.

### **Personal Protective Equipment**

Disposable gloves are available for all workers at risk of exposure and shall be worn anytime the employee is handling items which may be contaminated with blood or OPIM . Latex free gloves are available for workers who are allergic to latex.

In addition, if there is a large spill or a particular clean-up procedure which will expose more than just the hands, a bodily fluid disposal kit (available from Building Services Supervisor if you don't have one) shall be utilized.

### **Housekeeping**

All equipment and work surfaces that have been contaminated with blood or OPIM should be cleaned and decontaminated. After possible contamination, reusable receptacles such as pails and cans should be cleaned with an appropriate disinfectant.

A mechanical means such as tongs, forceps, or a brush and a dust pan should be used to pick up contaminated broken glassware. It should never be picked up by hand, even if gloves are worn. Contaminated sharps should be discarded into containers that are closable, puncture-resistant, and appropriately labeled.

A supervisor or the health center should be contacted to obtain the appropriate steps on discarding contaminated gloves or other materials.

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If you are ever in doubt about what procedures to follow, contact your supervisor BEFORE doing anything.

#### Hepatitis B Vaccine

All employees are offered the hepatitis B vaccine free of charge.

**Or**

Hepatitis B vaccination shall be made available after the employee has received the required training and within 10 working days of initial assignment and to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.

Number 111.01	<b>EQUIPMENT MAINTENANCE &amp; REPAIR</b>
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Approved by:	<b>Ben Jorgensen, Director of Facilities Operations &amp; Engineering</b>

Purpose:

To establish the policy and procedure for equipment maintenance and repair.

Policy:

The Facilities department will provide employees with safe equipment in good working order. The following guidelines will help management determine if repairs are necessary.

**Guidelines for Equipment Maintenance and Repair:**

Equipment maintenance and repair will be performed to meet the standards of:

- General safety standards and best business practices
- Any applicable codes, including
  - Occupational Safety and Health Administration (OSHA)
  - National Fire Protection Association (NFPA) which include
    - National Electric Code
    - Flammable Liquids Code
    - Life Safety Code
    - National Fuel Gas Code
  - Uniform Fire Code (UFC)
  - Manufacturer's recommendations

Damaged or malfunctioning equipment shall not be used until it is repaired. Employees will not remove or defeat any safety device or guards installed on equipment. Broken equipment should be placed out of service and reported to your supervisor.

112.01	<b>RECORDKEEPING AND POSTING PROGRAM</b>
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Approved by:	Ben Jorgensen, Director of Facilities Operations & Engineering

Purpose:

To establish the procedures regarding SPS Facilities Operations & Engineering requirements for compliance with OSHA record keeping and posting guidelines for occupational injuries and illnesses.

Policy:

All workplace locations are to post the "Job Safety and Health Protection" poster (or state equivalent) in a prominent place.

OSHA requires that employers maintain a record of certain occupational injuries that occur at each business establishment on the OSHA Form Log 300 and 300A: Log of Work-Related Injuries and Illnesses and Summary of Work-Related Injuries and Illnesses. At the end of each year, OSHA requires the summary section of the OSHA Form Log 300A to be posted at each business establishment no later than February 1 and remain in place until April 30. SPS Facilities Operations & Engineering will comply with this requirement.

The "Job Safety and Health Protection" poster and the Form Log and Summary of Occupational Injuries and Illnesses can be ordered from OSHA, free of charge, at 303-844-1600

Record Retention:

OSHA Form Log, January – November reports can be discarded upon receipt of the next monthly report.

Year-end OSHA Form Log 200, 300, 300A, and 301, retain for 5 years following the year to which they relate.

113.01	<b>HAZARDOUS MATERIAL SPILL CONTROL &amp; RESPONSE</b>
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Purpose:

To establish the policy and procedures regarding management and employee response and actions to a hazardous material spill or leak.

Policy:

Federal, state, and local environmental laws dictate the specific handling and disposal methods of hazardous materials. Failure to comply with these laws can be very costly as well as environmentally negligent. St. Paul's School will fully comply with all laws and regulations pertaining to the handling and disposal methods of hazardous materials. The Facilities department will train all employees in the proper procedures to follow and what to do when they encounter a hazardous spill or leak.

Overview:

There are four classifications of hazardous chemicals that employees will likely come into contact with. These are:

IGNITABLES---TOXINS---CAUSTICS---REACTIVES

**IGNITABLES-** Ignitable products are either flammable or combustible. A spill of this nature creates two problems: one involving the potential for explosion and/or fire, and the other is the pollution of the environment. Examples are gasoline, paint thinners, petroleum solvents, alcohol, and adhesives.

**TOXINS-** These products are poisonous to the body and can cause illness or death. These products may also be extremely harmful to the environment. Examples are anti-freeze, paint, insecticides, fertilizer, and cleaning fluids.

**CAUSTICS-** A caustic is anything that burns, strongly irritates, corrodes or simply destroys the skin. Examples are acids and drain cleaners.

**REACTIVES-** These products react violently when mixed with other products. The most common example is dry or liquid chlorine.

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Procedure:

Regardless of the nature of the spill, and before starting any cleanup activities, the employee(s) shall always secure the area around the spill. This is to include asking all employees and community members to move a safe distance away from the spill site. The employee(s) shall also barricade or cordon off access to the site with tape or other visual barriers as needed to keep people from wandering into the spill site. Once the area is secure, Management shall be notified of the spill, its location, and when the area is clean. Management shall also notify public safety officials or private clean up companies as necessary.

Employee(s) that are required and directed to conduct the cleanup of small spills shall always check the warning label of an unbroken container or the Material Safety Data Sheet (MSDS) of the product involved in the spill or leak. Either the product label or the MSDS should have cleanup procedures (Section VII of the MSDS form). If not, or if time does not permit, the employee(s) shall consider the product extremely hazardous and use the following cleanup procedure:

1. Immediately shut off or eliminate all possible sources of ignition to include turning off anything that might produce a spark, flame, or friction.
2. A fire extinguisher must accompany all ignitable spill cleanups.
3. Cover the spill or leak with absorbent materials to reduce evaporation.
4. Ventilate the area as well as possible by opening doors and windows.
5. Wear safety goggles, gloves, disposable overshoes, and respirator (as necessary) prior to cleaning up the substance.
6. Small spills (one pint or less) can be cleaned up with absorbent materials (rags, paper towels, etc.), and placed into a plastic bag. These bags will be labeled as a flammable or combustible. The label on the bag must also have the following information: (1) the name of the product in the bag, (2) the quantity of material in the bag, (3) name of manufacturer, (4) and the date of the spill. The words "Hazardous Waste" must be clearly marked on the bag.
7. After the spill area is thoroughly dry, the spill area shall be scrubbed with a mild detergent using a broom or mop.

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8. The bags shall then be placed in properly labeled containers for disposal. The Hazardous Waste Manager shall ensure that storage and disposal shall be in accordance to guidelines of local and state regulations.
9. All efforts shall be taken to prevent hazardous material from entering sewage systems. If infiltration occurs, the fire department shall be notified.

114.01	<b>FLAMMABLE/COMBUSTIBLE MATERIALS STORAGE &amp; HANDLING</b>
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Approved by:	Ben Jorgensen, Director of Facilities Operations & Engineering

**Purpose:**

The purpose of this policy is to protect SPS employees, facilities and machinery from damage and injury resulting from the improper storage of flammable and combustible liquids

Reference – OSHA Occupational Safety and Health Standard 1910.106 and NFPA30, Flammable and Combustible Liquids Code, 2008 edition.

**Responsibilities -****Management shall:**

- Provide proper storage for flammable liquids
- Ensure proper training is provided to employees who work with flammable liquids
- Ensure containers are properly labeled with the name of the product contained within

**Supervisors shall:**

- Provide adequate training in the use and storage of flammable liquids
- Monitor for proper use and storage
- Keep only the minimum amount required on hand
- Ensure MSDS are current for all flammable and combustible liquids

**Employees shall:**

- Follow all storage and use requirements
- Report deficiencies in storage and use to supervisors
- Immediately report spills to supervisors

**Definitions**

Flammable Liquid - a liquid with a flashpoint below 100°F

Class IA - flashpoint below 73°F and boiling point below 100°F

Class IB - flashpoint below 73°F and boiling point above 100°F

Class IC - flash at or above 73°F and below 100°F

Combustible Liquids - a liquid having a flash point at or above 100° F.

Class II Combustibles - Flashpoint above 100°F and below 140°F

Class III Combustibles - Flashpoint at or above 140°F



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Subclass IIIA - flashpoint at or above 140°F and below 200°F

Subclass IIIB - flashpoint at or above 200°F

Flashpoint – the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air

Safety can - an approved container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure

### **Policy:**

All flammable or combustible materials will be handled and stored in such a manner as to reduce the risk of fire or explosion. In order to minimize or eliminate the risk of fire and contamination from unintended release of flammable and combustible liquids the following control measures will be employed:

#### **Administrative Controls**

- Designated storage areas
- Limiting the amount of flammable liquids in use and storage
- Employee Training
- Limited & controlled access to bulk storage areas
- Posted or proper advisory signs in work locations

#### **Engineering Controls**

- Properly designed flammable storage areas
- Grounding Straps on Drums and dispensing points
- Proper and compliant storage containers

#### **Substitution**

Relatively safe materials sometimes may substitute flammable liquids in order to reduce the risk of fires. Any substituted material should be stable and nontoxic and should either be nonflammable or have a high flashpoint.

#### **Storage & Usage of Flammable Liquids**

Flammable and combustible liquids require careful handling at all times. The proper storage of flammable liquids within a work area is very important in order to protect personnel from fire and other safety and health hazards.

- Storage of Flammable liquids shall be in NFPA approved flammable storage lockers. Do not store other combustible materials near flammable storage areas or lockers

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- Bulk drums of flammable liquids must be grounded and bonded to containers during dispensing
- Portable containers of gasoline or diesel are not to exceed 5 gallons
- When not in use flammable liquids shall be kept in approved containers.
- Safety cans used for dispensing flammable or combustible liquids shall be kept at a point of use.
- Suitable fire control devices, such as small hose or portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored. Storage rooms for flammable and combustible liquids must have explosion-proof light fixtures
- Bulk storage of gasoline or diesel are kept in above ground tanks. Tank areas are diked to contain accidental spills. Tanks shall be labeled appropriately. All tank areas shall be designated no smoking - no hot work - no open flame areas.
- No flames - hot work or smoking is not permitted in flammable or combustible liquid storage areas.
- The maximum amount of flammable liquids that may stored in a building are
  - 20 gallons of Class IA liquids in containers
  - 100 gallons of Class IB, IC, II, or III liquids in containers table tank.

Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use. **Under no circumstances are flammable or combustible liquids to be stored inside buildings in areas not designed for such storage.**

- Flammable liquid transfer areas are to be separated from other operations by distance or by construction having proper fire resistance.
- Flammable liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.
- The transfer of flammable/combustible liquids from a container into machinery shall only take place at least 5 feet from a building. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Small spills shall be cleaned up as described in the Spill, Control and Response policy.
- Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.
- Rooms in which flammable or combustible liquids are stored or handled by pumps shall have exit facilities arranged to prevent occupants from being trapped in the event of fire.

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- Inside areas in which Class I liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam, hot water or forced central systems located away from the area.

#### Cabinets

Not more than 120 gallons of Class I, Class II, and Class IIIA liquids may be stored in a storage cabinet. Of this total, not more than 60 gallons may be Class I and II liquids. Not more than three such cabinets (120 gallons each) may be located in a single fire area except in an industrial area.

#### Containers

The capacity of flammable and combustible liquid containers will be in accordance with the below table.

#### Maximum allowable capacity of containers and portable tanks

	Flammable Liquids		Combustible Liquids		
Container	1A	1B	1C	II	III
Glass or approved plastic <sup>1</sup>	1 pt <sup>2</sup>	1 qt <sup>2</sup>	1 gal	1 gal	1 gal
Metal (Other than DOT drums)	1 gal	5 gal	5 gal	5 gal	5 gal
Safety Cans	2 gal	5 gal	5 gal	5 gal	5 gal
Metal drums (DOT specifications)	60 gal	60 gal	60 gal	60 gal	60 gal
Approved portable tanks	660 gal	660 gal	660 gal	660 gal	660 gal

(1) Nearest metric size is also acceptable for the glass and plastic

(2) One gallon or nearest metric equivalent size may be used if metal and labeled with their contents.

#### Storage Inside Buildings

If a flammable and combustible liquid storage building is used, it will be a one-story building devoted principally to the handling and storing of flammable or combustible

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liquids. The building will have 2-hour fire-rated exterior walls having no opening within 10 feet of such storage. Flammable paints, oils, and varnishes in 1 gallon containers, used for building maintenance purposes, may be stored temporarily in closed containers outside approved storage cabinets or room if kept at the job site for less than 10 calendar days.

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**Purpose:**

Attention to general cleanliness, storage and housekeeping can prevent numerous accidents. This chapter covers items not discussed in other areas and is not intended to cover all specific housekeeping requirements. Good housekeeping efforts are a part of the Facilities Department fire prevention and accident prevention program.

**Policy:**

Non-hazardous materials will be stored in a neat and orderly manner.

**Management and Employee Responsibility:**

All Employees share the responsibility for maintaining good housekeeping practice and following the established housekeeping procedures. The Manager, Supervisors, Safety Coordinator and Safety Committee will be responsible to monitor housekeeping as part of their facility safety inspection procedures, note any hazards or areas of non-compliance, initiate clean-up procedures and provide follow-up. Management has the additional responsibility to provide disciplinary action when necessary to reinforce compliance with this program.

**Smoking Policy:**

Smoking is not permitted in any location on the grounds of St. Paul's School, inside or outside of any building. Employees are permitted to smoke in their personal automobiles.

**Department and Area Housekeeping Procedures:**

Office areas are to be kept neat and orderly. The following general rules apply to prevent injuries and maintain a professional appearance.

1. All aisles, emergency exits, stairwells and fire extinguishers, etc., will be kept clear of material storage (temporary and permanent) at all times.
2. Storage areas will be maintained orderly at all times. When supplies are received, the supplies will be stored properly.
3. Spills will be cleaned-up immediately and wastes disposed of properly.
4. All waste receptacles will be lined with a plastic trash bag to avoid direct contact while handling. Custodial Employees will use rubber gloves and compaction bar when handling waste.

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5. Keep file and desk drawers closed when not attended to avoid injuries. Open only one drawer at a time to prevent tipping of file cabinets.

6. At the end of the business day, turn off all office equipment (area heaters, lamps, coffee-maker, PCs, etc.) and lights to save energy and prevent fires. All space heaters shall be un-plugged at the end of the day to assure they have been turned-off.

Production areas will be kept neat and orderly, during operations and as follows:

1. All aisles, emergency exits, fire extinguishers, eye wash stations, etc., will be kept clear (a minimum of three feet in front of and to either side) of product storage, material storage, fork trucks and pallet jacks at all times.
2. Spills will be cleaned up immediately.
3. All process leaks will be reported to supervision and maintenance for immediate repair and clean-up.
4. Utility Employees will be responsible to keep aisles and work floors clear of excessive debris and waste materials during shift operation, between breaks and at shift change when necessary or directed by supervision; however, all employees are responsible to communicate slippery floors to supervision for immediate clean-up.
5. All refuse and waste materials will be placed in the recognized waste containers for disposal.

Rest rooms, locker rooms and break areas are provided as a convenience for all employees.

The following rules will apply:

1. Employees are expected to clean-up after themselves as a common courtesy to fellow Employees.
2. Flammable materials (fire works, explosives, etc.) may not stored in lockers or brought on School property.
3. Personal food items will not be stored in lockers or left in break areas overnight.
4. All waste receptacles will be lined with a plastic trash bag to avoid direct contact while handling and Custodial employees will use rubber gloves and compaction bar when handling wastes.
5. All refuse and waste materials will be placed in the recognized waste containers for disposal.

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Maintenance Areas:

1. All aisles, emergency exits, fire extinguishers, etc., will be kept clear (a minimum of three feet of either side) of material storage (temporary and permanent) at all times.
2. Storage Areas will be maintained orderly at all times:
  - a. Pipe stock stored horizontally on racks and sorted by size
  - b. Metal stock stored horizontally on racks and sorted by size
  - c. Sheet metal stock stored vertically in racks and sorted by type
  - d. All fittings, etc., stored in bins on shelves and sorted by type and use
  - e. All flammable liquids stored in approved Flammable Liquid Storage Cabinets and self-closing cans where necessary
3. Spills will be cleaned-up immediately by the person responsible and waste disposed of properly.
4. All refuse and waste materials will be placed in the recognized waste containers for disposal.

Grounds:

The grounds surrounding the School are an extension of the work place. Grounds that are kept neat and orderly show pride by the School for faculty, staff, students and guests to enjoy.

The following general rules will apply:

1. All trash will be discarded only in the waste containers provided.
2. Park only in the designated assigned area.
3. The Facilities Department will be responsible for grounds keeping (mowing, trimming, etc.) as needed and will also establish procedures for ice/snow removal, when necessary, prior to operations each day.

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Material Storage:

Proper storage procedures are required for dry, raw materials, finished product flammables and compressed gases storage to prevent fires, keep exits and aisles clear and avoid injuries and illnesses. General rules for material storage are as follows:

Materials and Finished Products Storage

1. Materials may not be stored any closer than 18 inches below the deflector plate of a sprinkler head, or 24 inches below a ceiling in a non-sprinklered room. A minimum of 3 feet side clearance will be maintained around doorways and emergency exits. Passageways and aisle will be properly marked and a minimum of six feet in width. Materials, forklifts, pallet jacks, etc., may not be stored in aisles or passageways.
2. Aisles and passageways will be kept clear of debris. All spills of materials will be immediately cleaned-up by the person responsible.
3. All platforms and racks will have maximum load capacity displayed. The weight of stored material will not exceed the rated load capacity.
4. No storage is permitted in front of electrical distribution panels so that they may be opened in an emergency.



116.01	<b>LADDER SAFETY</b>
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**Policy:**

Ladders, including step-ladders, will be used in a manner that reduces or eliminates the risks of injury or property damage.

**Purpose:**

Ladders present unique opportunities for unsafe acts and unsafe conditions. Employees who use ladders must be trained in proper selection, inspection, use and storage. Improper use of ladders is responsible for a large percentage of accidents in the workplace. Use caution on ladders.

OSHA reference: (29 CFR 1910.25, 1910.26, and 1910.27).

**Hazards:**

Falls are the primary hazard associated with the use of ladders. Falls result from a number of unsafe acts and conditions such as:

- 1) Ladders being set on unstable surfaces.
- 2) Personnel reaching too far out to the sides.
- 3) Personnel standing too high to maintain balance.
- 4) Personnel using defective ladders (e.g., broken rails, rungs, missing hardware).

These hazards are minimized if workers adhere to proper ladder safety practices and if supervisors ensure equipment is used, inspected, and maintained in good condition. Tasks which require frequent use of ladders and involve significant climbing effort must be accomplished by workers capable of the physical exertion required under these conditions.

**Procurement:**

Portable ladders procured for the Facilities Department shall meet the design and construction specification of OSHA 29 CFR 1910.25 for wood ladders and 29 CFR 1910.26 for metal ladders. Portable ladders constructed of reinforced plastic shall meet the specifications of ANSI A14.5-1974.

**Requirements:**

The following requirements apply to all ladders as indicated, including job-made ladders.

- (1) Ladders shall be capable of supporting the specified load without failure:
- (2) Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.

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(i) Rungs, cleats, and steps of step stools shall be not less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, as measured between center lines of the rungs, cleats, and steps.

(ii) The rungs of individual-rung/step ladders shall be shaped such that employees' feet cannot slide off the end of the rungs.

(3) Ladders shall not be tied or fastened together to provide longer sections unless they are specifically designed for such use.

(4) A metal spreader or locking device shall be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.

(5) Except when portable ladders are used to gain access to fixed ladders (such as those on utility towers, billboards, and other structures where the bottom of the fixed ladder is elevated to limit access), when two or more separate ladders are used to reach an elevated work area, the ladders shall be offset with a platform or landing between the ladders.

(6) Ladder components shall be surfaced so as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

(7) Wood ladders shall not be coated with any opaque covering, except for identification or warning labels which may be placed on one face only of a side rail.

(8) Fixed ladders shall be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet (7.3 m) but the top of the ladder is at a distance greater than 24 feet (7.3 m) above lower levels.

(9) Where the total length of a climb equals or exceeds 24 feet (7.3 m), fixed ladders shall be equipped with one of the following:

(i) Ladder safety devices; or

(ii) Self-retracting lifelines, and rest platforms at intervals not to exceed 150 feet (45.7 m); or

(10) Wells for fixed ladders shall conform to all of the following:

(i) They shall completely encircle the ladder;

(ii) They shall be free of projections;

(iii) The inside clear width shall be at least 30 inches (76 cm);

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(11) Ladder safety devices, and related support systems, for fixed ladders shall conform to all of the following:

- 1) They shall be capable of withstanding without failure a drop test consisting of an 18-inch (41 cm) drop of a 500-pound (226 kg) weight;
- 2) They shall permit the employee using the device to ascend or descend without continually having to hold, push or pull any part of the device, leaving both hands free for climbing;
- 3) They shall be activated within 2 feet (.61 m) after a fall occurs, and limit the descending velocity of an employee to 7 feet/sec. (2.1 m/sec.) or less;
- 4) The connection between the carrier or lifeline and the point of attachment to the body belt or harness shall not exceed 9 inches (23 cm) in length.

#### **Use of Ladders:**

The following requirements apply to the use of all ladders, including job-made ladders, except as otherwise indicated. The correct procedures for using ladders are as follows

(1) When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (.9 m) above the upper landing surface (the roof) to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

(2) Ladders shall be maintained free of oil, grease, and other slipping hazards.

(3) Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond their manufacturer's rated capacity.

(4) Ladders shall be used only for the purpose for which they were designed.

Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.

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(5) Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.

(6) Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement. Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.

(7) Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.

(8) The area around the top and bottom of ladders shall be kept clear.

(9) The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment.

(10) Ladders shall not be moved, shifted, or extended while occupied.

(11) Ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized electrical equipment. No material is completely safe when contacting energized electrical equipment and wires. Extreme care shall be exercised when using ladders within close proximity to energized wires.

(12) The top or top step of a stepladder shall not be used as a step.

(13) Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.

(14) Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired.

The requirement to withdraw a defective ladder from service is satisfied if the ladder is either:

- (i) Immediately tagged with "Do Not Use" or similar language.

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(ii) Marked in a manner that readily identifies it as defective;

(iii) Or blocked (such as with a plywood attachment that spans several rungs).

(15) When ascending or descending a ladder, the user shall face the ladder

(16) Employees will always maintain at least three points of contact with the ladder at all times.

### Care of Ladders:

- a) Handle ladders with care. Do not drop, jar or misuse them.
- b) Ladders shall be stored in a manner that will provide easy access for inspection and will permit safe withdrawal for use. They shall not be stored in a manner that presents a tripping hazard not where they can fall on someone. They should be stored in a manner that will prevent sagging.
- c) Lubricate metal bearings of locks, wheels, pulleys, etc., as required to keep them working.
- d) Replace frayed or badly worn rope.
- e) Keep safety feet and other parts in good condition to ensure they work.
- f) Maintain ladders in good usable condition. Inspect ladders prior to use.
- g) Ladders with defects which cannot be immediately repaired, shall be removed from service for repair or destruction, and shall be tagged with a danger tag. Do not attempt to straighten or use a bent ladder made of reinforced plastic.

### **STEPLADDER SAFETY**

1. If possible, always store and transport wooden stepladders inside a vehicle. Water (rain, dew, fog, etc.) will soften wood, and the softer parts will start separating from the grain.
2. Just prior to each use, inspect the ladder for possible unsafe conditions.
3. Use caution as to leg placement. All four feet should ideally be set on level, firm footing. If the ladder feet must be set on soft or muddy ground, try to place large, level objects under the feet. Large wooden boards (2 x 6 or 2 x 8) are good. A sheet of plywood large enough for all four feet is ideal.
4. Never place the ladder in front of a window. If it should slip, either you or the ladder will go through the glass.
5. Never stand on the top of a stepladder. They are not designed as platforms. Neither the top step, nor the top of the ladder, should be used for supporting your weight. Balance is seriously impaired on either one. Balance pants buckle between ladder rails.

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6. If you must lean the ladder against a wall with the rear legs closed, make sure the front legs are solidly placed. If they are on soft surfaces, step on each side of the bottom step alternately until the feet penetrate the soft surface.
7. Ladders should never be painted.
8. Rubberized feet are required on all ladders, and where practical, ladders should be tied off.

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Policy:

All employees who may be exposed to respiratory hazards will be provided with and trained in the use of appropriate respiratory protection.

Purpose:

The purpose of this operating procedure is to ensure the protection of all employees from respiratory hazards, through proper use of respirators. Respirators are to be used only where engineering control of respirator hazards is not feasible, while engineering controls are being installed, or in emergencies.

Responsibility:

The Assistant Director for Operations and Trades Manager are jointly responsible for all facets of this program and have full authority to make necessary decisions to ensure success of this program. This authority includes equipment purchases necessary to implement and operate the program.

**The Director of Facilities has expressly authorized any Department employee to halt any operation where there is danger of serious personal injury.**

Program Elements

1. Written standard operating procedures governing the selection and use of respirators, using the NIOSH Respirator Decision Logic as a guideline. Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection and use. These detailed procedures will be included as appendices to this respirator program. Only the Environmental Health and Safety Manager may amend these procedures.
2. Respirators will be selected on the basis of hazards to which the worker is exposed. All selections will be made by the Asst. Director for Operations or Trades Manager. Only MSHA/NIOSH-certified respirators will be selected and used.
3. The user will be instructed and trained in the proper use of respirators and their limitations. Both supervisors and workers will be so instructed by the Environmental Health and Safety Manager. Training should provide the employee an opportunity to handle the respirator, have it fitted properly, test its face piece-to-face seal, wear it in normal air for an adequate familiarity period, and finally to wear it in a test atmosphere. Every respirator wearer will

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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 will 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. No employees of the Facilities Department, who are required to wear respirators, may wear beards. Also the absence of one or both dentures can seriously affect the fit of a face piece. The worker's diligence in observing these factors will be evaluated by periodic checks. To assure proper protection, the face piece fit will be checked by the wearer each time the wearer puts on the respirator. This will be done by following the manufacturer's face piece-fitting instructions.

4. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

5. Respirators will be regularly cleaned and disinfected after use. Those issued for the exclusive use of one worker will be cleaned after each day's use, or more often if necessary. Those used by more than one worker will be thoroughly cleaned and disinfected after each use.

6. Shipping & Receiving will store new respirators in a clean and sanitary location.

7. Respirators used routinely will be inspected during cleaning. Worn or deteriorated parts will be replaced. Respirators for emergency use such as self-contained devices will be thoroughly inspected at least once a month and after each use. Adherence to the following guidelines will help ensure the proper and safe use of respiratory equipment:

- Wear only the respirator you have been instructed to use. For example, do not wear a self-containing breathing apparatus if you have been assigned and fitted for a half-mask respirator.
- Wear the correct respirator for the particular hazard. For example, some situations, such as chemical spills or other emergencies, may require a higher level of protection than your respirator can handle. Also, the proper cartridge must be matched to the hazard (a cartridge designed for dusts and mists will not provide protection from vapors)
- Check the respirator for a good fit before each use. Positive and negative fit checks should be conducted.
- Check the respirator for deterioration before and after use. Do not use a defective respirator.



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- Recognize indications that cartridges and canisters are at their end of service life. When in doubt, the user shall change cartridges/ canisters before using respirator.
- Practice moving and working while wearing the respirator so that you can get used to it.
- Clean the respirator after each use, thoroughly dry it and place the cleaned respirator in a sealable plastic bag.
- Store respirators carefully in a protected location away from excessive heat, light, and chemicals.

8. Appropriate surveillance of work area conditions and degree of employee exposure or stress will be maintained.
9. There will be regular inspection and evaluation to determine the continued effectiveness of the program. The Assistant Director for Operations and/or Trades Manager will make frequent inspections of all areas where respirators are used to ensure compliance with the respiratory protection programs.
10. Persons 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.
11. Only certified respirators will be used.
12. All employees who are required to routinely wear respirators will complete a medical clearance questionnaire and fit testing at least every 24 months.

201.01	<b>SHOP &amp; WORKPLACE SAFETY</b>
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Policy:

Accepted safety and health precautions will be practiced in the use of general shop machines, fixed and portable power tools, and other hand held equipment so that all employees using such equipment will be protected against personal injury. It is also the Facilities Department policy to institute practices which will minimize the danger of injury to non-operators or other personnel who may be in the area and to minimize the risk to visitors.

Responsibilities:

Supervisors must recognize those factors in the workplace with accident potential. The supervisor shall provide frequent inspections of job sites, work methods, and materials/equipment used. Any unsafe equipment/material shall be tagged and rendered inoperative or physically removed from its place of operation until repaired. The supervisor shall permit only qualified personnel to operate equipment and machinery according to safe work practices.

a. Supervisors shall:

1. Ensure safe working conditions.
2. Provide necessary protective equipment and training in its proper use.
3. Ensure that required guards and protective equipment are provided, used, and properly maintained.
4. Ensure that tools and equipment are properly maintained and used only as intended.
5. Plan the workload and assign employees to jobs which they are qualified to perform. Supervisors shall also ensure that the employees understand the work to be done, the hazards that may be encountered, and the proper procedure for doing the work safely.
6. Take immediate action to correct any violation of safety rules observed or reported to them.
7. Ensure workers exposed to hazardous chemicals/materials have access to appropriate Material Safety Data Sheets (MSDS), access to immediate medical care when needed and all required paperwork is filled out after the exposure.
8. Be responsible for being familiar with all procedures for safe use and guarding of machines, personal protective equipment required, and enforce safe practices where fixed or portable powered or unpowered machines and tools are located.
9. Train new employees by providing and requiring manuals to be studied, personally instructing and requesting the assistance of veteran employees already familiar with required safety precautions.

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10. Post signs indicating the use of powered machines by "Authorized Personnel Only" and require that all employees under his/her supervision assist in the enforcement of this policy. No one is allowed to use fixed or portable powered shop machines or welding equipment without sufficient training to the supervisor's satisfaction.

11. Designate a person to be responsible for general management of a specific shop area and notify the Environmental Health and Safety Manager of the person selected.

12. Designate a qualified person to be responsible for each major fixed, powered machine or tool. The supervisor shall also post the name of the qualified person(s) on or near the apparatus, and keep an accurate record of qualified personnel for each machine.

13. Coordinate with the Environmental Health and Safety Manager to plan and conduct safety meetings with employees as often as needed and warranted. Topics to be discussed at each session will be selected to fit current operations and any unsafe trends. Supervisors will lead the discussion and encourage each employee to participate.

14. Provide appropriate marking of shop floor areas to identify restricted work areas or "approved operator only" yellow floor lines.

15. Make periodic inspections of shop areas and other industrial areas, noting all deficiencies and initiating corrective actions.

16. Ensure that all painting operations or other operations are conducted in well ventilated areas. The supervisor shall seek assistance from the Environmental Health and Safety Manager in making this determination

#### b. Employees

Employees shall be thoroughly trained in the use of protective equipment, guards, and safeguards for chemicals and safe operation of equipment, machines, and tools they use or operate. Only employees who have been trained and those undergoing supervised on-the-job training (OJT) shall be allowed to use shop equipment, machines, and tools.

Employee shall also:

1. Comply with OSHA standards, Facilities Department policies and good safe practices when using fixed and portable power tools, equipment and hand held equipment.
2. Maintain work area and tools in a clean, safe and professional manner while work is underway and immediately after work has been completed.
3. Properly train new users of equipment for which he/she is responsible.

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4. Share responsibility with the supervisor for identifying and marking shop floor areas.
5. Not use or permit use of defective equipment or tools. Malfunctioning equipment and damaged hand tools will be reported and repair made prior to tool use resuming. If repairs are not possible the equipment or tools will be properly discarded with Supervisors approval.

C. Department Safety Coordinator shall:

1. Ensure compliance to applicable OSHA standards, Facilities Department policies, and safe work habits are practiced.
2. Assist supervisors and employees in defining hazards and designating safe practices.
3. Conduct routine and periodic inspection of shop areas for compliance to OSHA standards and department policies.
4. Assist supervisors in planning and conducting safety meetings.

General Shop and Work Area Safety:

A. Shop Procedures:

- a. All portable and fixed powered shop machines and tools will be equipped with approved guarding devices. Guards are to be in place before, during and after tool use. Equipment must also be properly grounded before use.
- b. Proper personal protective equipment will be provided (safety glasses, goggles, shields, hearing protection) and used during grinding or other work that may produce flying particles or loud noise(e.g. drill press, power saws, etc.). Facilities Department approved dust respirators will be used for work that produces airborne dust particles. Eye protection is required during any activity that has the potential to produce injury to the eye (i.e., chemical spill, dust, blunt trauma).
- c. Approved face, eye and body protection will be used during any burning or welding operation. Also, sufficient shielding that provides protection to others in the immediate area will be used.
- d. No flammable liquids (paints, solvents, chemicals, etc.) will be stored within the immediate area of any burning or welding operation. Flammable liquids must be stored in approved cabinets and containers. Flammable liquids will not be stored within buildings unless they are stored in approved containers within areas designed and maintained for such storage.
- e. Any employee using portable fixed tools (drill press, jig or band saw, etc.) must not wear loose clothing. Anyone with long hair must tie back the hair or wear acceptable hair protection while operating equipment.
- f. Before any employee performs service or maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment shall be made

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safe. This will be accomplished by locking out and tagging out energy isolating devices and otherwise disabling the machines or equipment (see Lockout/Tagout Policy).

**g.** Clean-up after using powered equipment or hand tools must be done immediately following use of the power tool.

**h.** Before any work is started in any laboratory area, a request will be made to the SPS Chemical Hygiene Officer to ensure that there will be no danger from hazardous materials in the immediate area of work.

**i.** All burning or welding operations requires a Hot Work permit from the Trades Manager or Assistant Director for Operations.

**j.** Good housekeeping will be maintained in the shop area. Material will be stored in such a manner that there is no danger from sliding, falling or presenting a hazard by striking against or cutting. Scrap stock must be cleaned from floor and work benches following each job or at the end of each day.

## B. Personal Protective Equipment

Personal protective equipment (PPE) is not a substitute for engineering controls or feasible work or administrative procedures. While these controls are being implemented, or if it has been determined that control methods are not feasible, personal protective equipment is required whenever there are hazards that can do bodily harm through absorption, inhalation, or physical contact. This equipment includes respiratory and hearing protective devices, special clothing, and protective devices for the eyes, face, head, and extremities. All PPE shall be of a safe design and constructed for the work to be performed and shall be maintained in a sanitary and reliable condition.

### 1. Eye Protection

Eye protection is required when there is a possibility of injury from chemicals or flying particles. Examples of operations requiring the use of eye protection include, but are not limited to:

- Chipping, grinding, and impact drilling.
- Breaking concrete, brick, and plaster.
- Welding or helping in welding of any type.
- Cleaning with compressed air.

### 2. Hearing Protection

Appropriate hearing protection shall be used where employees are in designated hazardous noise areas with operating noise sources, or using tools or equipment which are labeled as hazardous noise producers. Employees operating portable engine-driven equipment (lawn mowers, weed whackers, snow blowers, etc.) will wear hearing protection when the engine is in operation.

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### 3. Hand Protection

- a. Protective gloves shall be worn by personnel working with acids, alkalis, organic solvents, potential pathogens and other harmful chemicals.
- b. Electrical worker's gloves are designed and shall be used to insulate electrical workers from shock, burns, and other electrical hazards. These gloves shall NOT be the only protection provided and will never be used with voltages higher than the insulation rating of the gloves.
- c. Multi-use gloves shall be worn to protect the hands from injuries caused by handling sharp or jagged objects, wood, or similar hazard-producing materials. These gloves are usually made of cloth material with leather palms and fingers or synthetic coating. All-leather gloves are also acceptable.

### 5. Foot Protection

Conditions-appropriate footwear will be worn at all times. At a minimum, this means rubber-soled, closed-toe boots or shoes. Insulated footwear will be worn outside in winter conditions. Only employees assigned to office working conditions may wear non-conforming footwear. Employees may be reimbursed up to \$50 for the purchase of footwear that meets or exceeds ASTM Standard F2413-05; electrician's footwear must also be rated for Electrical Hazard use.

### 6. Respiratory Protection

There are various airborne hazards, e.g., organic vapors, particulates, fumes, etc., that personnel may encounter and respiratory protection may be required. The Environmental Health and Safety Manager shall be consulted for guidance on the type of protection required.

### 7. Head Protection

Hard hats shall be worn by all personnel working below other workers and in areas where sharp projections or other head hazards exist. Hard hats will also be worn in work areas posted as "Hard Hat Areas".

### 8. Body Protection

Appropriate clothing shall be worn at all times. At a minimum this includes uniform shirt and pants. Employees engaged in welding or cutting operations will wear appropriate long-sleeved flame resistant shirts or jackets and electricians exposed to potential arc-flash will wear appropriate arc-flash resistant clothing and other protective equipment.

### 9. Other

- a. Shop supervisors shall ensure that shop personnel use the protective clothing and equipment that will protect them from hazards of the work they perform. It is the responsibility of workers to keep their PPE in a clean, sanitary state of repair and use the equipment when required.

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b. Workers shall keep their hands and face clean, change clothes when they are contaminated with solvents, lubricants, or fuels, and keep their hands and soiled objects out of their mouth. No food or drink shall be brought into or consumed in areas exposed to toxic materials, chemicals, or shop contaminants. Workers shall wash their hands before eating after exposure to any contaminant.

c. Workers shall not wear dangling earrings or other piercings or necklaces in the vicinity of operating machinery and power tools. Additionally, long full beards, unrestrained long hair, and loose clothing can become caught in tools or machinery and cause serious personal injury. Highly combustible garments or coveralls made of material such as nylon shall not be worn in or around high temperature equipment or operations such as boiler operations, welding, and any other work with open flame devices.

#### C. Shop Layout

Proper layout, spacing, and arrangement of equipment, machinery, passageways, and aisles are essential to orderly operations, to avoid congestion and to provide a safe work environment.

#### D. Illumination

Adequate illumination shall be provided to ensure safe working conditions.

a. Portable lamps shall have a UL listing.

b. For work in boilers, condensers, tanks, turbines, or other grounded locations that are wet or may cause excessive perspiration, a low voltage lighting system should be used, either from a battery system or low-voltage lighting unit. In situations where these lighting systems are not available, a vapor-proof 110 volt lighting system shall be used.

c. Flashlights for use near energized electrical equipment and circuitry shall have insulated cases.

#### E. Housekeeping

Good housekeeping shall be maintained in all shops, yards, buildings, and mobile equipment. Supervisors are responsible for good housekeeping in or around the work they are supervising. As a minimum, the following requirements shall be adhered to:

a. Material shall not be placed where anyone might stumble over it, where it might fall on someone, or on or against any support unless the support can withstand the additional weight.

b. Aisles and passageways shall be kept clear of tripping hazards.

c. Nails shall be removed from loose lumber or the points turned down.

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- a. Ice shall be removed from all walkways and work areas where it may create a hazard or interfere with work to be done. If ice cannot be removed readily, sand or other approved materials shall be applied.
- b. Trash and other waste materials shall be kept in approved receptacles. Trash shall not be allowed to accumulate and shall be removed and disposed of as soon as practicable.
- c. Disconnect switches, distribution panels, or alarm supply boxes shall not be blocked by any obstruction which may prevent ready access.
- d. Machinery and equipment shall be kept clean of excess grease and oil and (operating conditions permitting) free of excessive dust. Pressure gauges and visual displays shall be kept clean, visible, and serviceable at all times. Drip pans and wheeled or stationary containers shall be cleaned and emptied at the end of each shift.

#### F. Fire Prevention

- a. Supervisors in charge of operations where fuels, solvents, or other flammable liquids are used shall be constantly alert for hazards and unsafe acts. Fuels such as gasoline shall never be used to clean floors or clothing, and open solvent or gasoline containers shall not be kept near electrical equipment. Gasoline containers or gasoline powered equipment shall not be stored inside buildings unless the area or space has been designed for such storage. The use of low flashpoint petroleum solvents shall be avoided whenever possible. Open flames, open element heaters, equipment not properly grounded, and nonexplosion-proof electrical equipment used in the presence of flammable or combustible liquids shall be prohibited.
- b. Fire extinguishers shall be installed in shop areas. The number of extinguishers depends upon the size and layout of the facility. Employees are not expected to fight fires with extinguishers unless they have been trained to do so. In the event of a fire, the employees' first responsibility is alerting other employees by sounding the fire alarm.

Supervisors shall ensure that employees remove construction debris and rubbish from the job site upon completion of the job, or daily if extended beyond one day. Hazardous materials shall not be left at job sites unless properly stored. Work being performed on job sites shall not endanger building occupants (e.g., exits blocked, fire alarm devices disconnected, etc.). Whenever work involves a life safety device such as an exit, fire alarm or sprinkler system, consultation with the



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Environmental Health and Safety Manager shall take place prior to the work starting.

#### H. Material Storage

All unnecessary accumulation of materials and supplies in the shop area shall be avoided. The presence of unnecessary material in the shop could cause such incidents as tripping, falling, or slipping. This could be especially hazardous around equipment that is in operation. The only material in the shop area shall be that actually in work. The only area where materials may accumulate in quantity is in storerooms and material holding areas.

- a. The storage of materials shall not, of itself, create a hazard. Materials stored in tiers shall be stacked, strapped, blocked or interlocked, and limited in height so they are stable and secure against sliding or collapse. Storage racks shall have sufficient capacity to bear the loads imposed on them.
- b. Stored materials shall not obstruct fire extinguishers, alarm boxes, sprinkler system controls, electrical switch boxes, machine operations, emergency lighting, first aid or emergency equipment, exit signs or exits.
- c. Heavy materials and equipment should be stored low and close to the ground or floor to reduce the possibility of injury during handling.
- d. All passageways and storerooms shall be maintained clean, unobstructed, dry, and in sanitary condition. Spills will be promptly removed.
- e. Where mechanical handling equipment, such as lift trucks are used, safety clearance shall be provided for aisles at loading docks, through doorways, and wherever turns or passages must be made. No obstructions that could create a hazard are permitted in aisles.
- f. Material shall never be allowed to be stored in stairwells. Stairwells shall be kept free and clear of material storage at all times.

#### 1. Hand tools

- a. Incidents at the job site involving hand tools are usually the result of misuse. Hand tools are precision tools capable of performing many jobs when used properly. Prevention of incidents involving hand tools on the job site becomes a matter of good instruction, adequate training, and proper use.
- b. Hand tool safety requires that the tools be of good quality and adequate for the job. All tools shall be kept in good repair and maintained by qualified personnel.
- c. When personnel use hand tools while they are working on ladders, scaffolds, platforms, or work stands, they shall use carrying bags for tools which are not in use. Workers shall not drop tools.

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- d. Supervisors shall inspect all hand tools used in the operation under their supervision regularly. Defective tools shall be immediately removed from service.

## 2. Portable power tools

Portable power tools increase mobility and convenience but are frequently more hazardous to use than their stationary counterparts. Personnel who are required to use portable power tools in their work shall be thoroughly trained in safe operating practices. Safe operating procedure shall be set up for each type of tool consistent with the manufacturer's instructions. Careful inspection of a corded power tools cord shall be done prior to each days use. Frays, splits and breaks in the insulation shall be remedied prior to using.

## J. Use of Compressed Air Sources

1. Compressed air has the appearance of a relatively harmless gas. However, to avoid accidents, compressed air must be used correctly. The improper or inadvertent connection of items not designed for shop air pressure, i.e., equipment, storage vessels, or containers, to a shop air supply may cause serious personal injury and more than likely will damage the item being connected.
2. The following rules and practices are suggested to avoid personal injury, equipment damage, and potential environmental impact:
  - a. All personnel assigned to shops with air compressors shall be familiar with compressor operating and maintenance instructions.
  - b. Compressed air is not to be used to blow dirt, chips, or dust from clothing.
  - c. Air compressors shall be maintained strictly in accordance with the manufacturer's instructions.
  - d. Do not use compressed air to transfer materials from containers when there is a possibility of exceeding the safe maximum allowable working pressure of the container.
  - e. The maximum working pressure of compressed air lines shall be identified in psi. Pipeline outlets shall be tagged or marked showing maximum working pressure immediately adjacent to the outlet.
  - f. Do not use compressed air to transfer materials from standard 55-gallon drums. Use a siphon with a bulk aspirator on a pump.
  - g. Do not use compressed air to clean machinery or parts unless absolutely necessary. Where possible, use a brush. If necessary, use a minimum pressure and provide barriers or clean the area of personnel. Wear goggles to protect your eyes.

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- h. Never apply compressed air to any part of a person's body.
- i. Do not use a compressed air line that does not have a pressure regulator for reducing the line pressure.
- j. Keep the hose length between tool housing and the air source as short as possible.
- k. Where possible, attach a short length of light chain between the hose and the housing on air-operated tools. This keeps the hose from whipping should the hose-tool coupling separate.
- l. Inspect air supply and tool hoses before using. Discard and label unfit hoses. Repair hoses where applicable.
- m. Turn valve off and vent pressure from a line before connecting or disconnecting it. Never work on a pressurized line.
- n. Do not connect air supply respirators or supplied-air suits to the compressed air supply system of any building. Such compressed air is unsafe to breathe.
- o. Do not attach pneumatic tools, process, or control instruments to breathing air lines. The potential contamination to personnel and systems is hazardous.

#### K. Rooftop Work

If the rooftop to be worked on is not provided with an adequate guardrail, the following procedures shall apply:

- a. No employee shall work within 10 feet of the roof's edge without wearing a lifebelt or harness attached to a securely anchored rope or line, with the entire system being capable of supporting a minimum dead weight of 5,400 pounds.
- b. No employee shall work on the rooftop if the wind speed exceeds 20 miles per hour.

#### L. Barricades

Whenever a common area is disturbed by maintenance, repair, or construction operations and presents a hazard to personnel in or near, or traveling through the area, care shall be taken to warn personnel of the potential hazard. Appropriate barriers shall be erected around excavations, open manholes, open electrical panels, etc., whenever they are to be left unattended.

202.01	<b>LOCKOUT/TAGOUT PROGRAM (LOTO)</b>
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Purpose:

This policy and procedure establishes the minimum requirements for the department Lock Out/Tag Out (LOTO) Program. It governs lock out and/or tag out procedures to be used to verify that equipment or machines are isolated from all potentially hazardous energy. Machinery is to be locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected energizing, start up or release of stored energy could cause injury.

Circuit breakers disconnect switches, and other energy isolating devices used to control the flow of energy to the machine/equipment must be operated in such a manner as to shut off or "isolate" all energy to the equipment being serviced.

Policy:

The procedures described apply to all electrical equipment and machinery connected to an energy source by either hard wire or other permanent connection (hydraulic lines, electrical, etc.) that is repaired, serviced, or maintained by Facilities Department personnel. The LOTO Program applies to all equipment or machinery operated by mechanical, hydraulic, pneumatic, chemical, thermal, or other energy resources where the unexpected energizing could cause injury to employees or customers.

Definitions:

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

**Energized-** Connected to an energy source or containing residual or stored energy.

**Energy Isolating Device-** A mechanical device that physically prevents the transmission or release of energy (for example, circuit breaker, disconnect switch, slide gate, line valve, etc.)

**Lock out-** The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

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

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**Tag out-** The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

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

### **Initial Training:**

Employees will receive training in the requirements of this program upon initial assignment. The Environmental Health and Safety Manager or designee is responsible for verifying that training is completed as required by this program.

Authorized employees will be trained in the recognition of hazardous energy sources present at the location they work, the type and magnitude of the energy available in the workplace, and the methods/means needed for energy isolation and control.

Employees must be trained to recognize when the LOTO Program is being implemented and understand the purpose of the procedure and the importance of not attempting to start up or use machinery or equipment that has been locked or tagged out.

When tags or locks are used, employees must be specifically instructed in the following limitations of tags and locks:

- Tags are warning devices: they do not provide physical restraint that a lock out does and are not a substitute for a lock out device.
- When a tag or lock is attached, it is not to be removed by anyone without authorization from the employee who placed it on the machine or equipment. They are never to be bypassed, ignored, or defaced by employees. **In an emergency, when the employee who placed the tag or lock cannot be located, the removal of a LOTO tag or device can be authorized only by the Director or Assistant Director of Facilities.**
- Tags must be legible and understandable to be effective.
- Tags and locks, and their means of attachment must be made of material that will withstand the working environment where the tags will be used.

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Periodic Inspection –

The Facilities Department will annually inspect the LOTO program to gauge and assess its effectiveness. The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure being inspected.

NOTE:

The seasonal shut down of the steam distribution system shall be Locked Out and Tagged Out by the Facilities Director or his Assistant.

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**Purpose:**

To establish the policy and procedures regarding employee response and actions to working in confined spaces. Working in confined spaces can lead to injury or even death if adequate precautions are not taken. Only trained personnel may enter or work in confined spaces.

References: Occupational Safety and Health Standard 1910.146

**Policy:**

It is the policy of the Facilities Department to protect the health and welfare of all employees whose work assignments may require entering or working in permit-required confined spaces. Only persons with appropriate aptitudes and physical competence shall be employed in confined space work. Training of selected persons to carry out confined space work shall include:

- Emergency entry and exit procedures
- Use of appropriate respiratory protective equipment
- First aid, including Cardio-Pulmonary Resuscitation (CPR)
- Lock Out and Isolation procedures
- The use of safety equipment
- Rescue drills
- Fire protection
- Communications
- Aspects essential for maintaining the safety of the breathing environment
- Recognition of any hazards specific to the operation/activity.

Confined spaces can include storage tanks, process vessels, boilers, silos, storage bins, pits, pipes, sewers, tunnels and shafts. Any place of work where the atmosphere is liable to be contaminated at any time by dust, fumes, mist, vapor, gas or other harmful substance, or is liable at any time to be oxygen deficient is defined as a confined space. When any work area is not subject to good natural ventilation, people can be readily exposed to harmful vapors. They can then suffer lack of oxygen, and collapse as a result. People entering the same space to rescue colleagues may become the next victims.

The Facilities Department will ensure that our employees are protected from the potential hazards involved in entering confined spaces. We will make every effort to comply with the OSHA Permit-Required Confined Space Standard (CFR 1910.146) and to exceed those requirements when necessary to ensure the safety of our workers.

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### CONFINED SPACES (NON-PERMIT)

A "confined space" means a space that:

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

Entry into confined spaces that do not require a permit shall be made with caution.

Employees desiring to enter a non-permit confined space shall:

1. Enter the space only under the direction of their supervisor,
2. Determine if there has been any changes in the use or configuration of the space that will change its classification,
3. Determine if any activities in the area could cause a hazardous atmosphere to build up in the space,
4. Not perform any activities in the space that could cause a buildup of a hazardous atmosphere, (i.e. welding, painting, or use of chemicals).
5. Never work alone.
6. Consider continuous forced air ventilation for spaces that are below ground.

Precautions must be taken for entry into non-permit required spaces. The space atmosphere must be tested for oxygen concentration, combustible gas or vapor, and potential toxic contaminants. Any hazardous conditions detected must be reported to the supervisor and work halted until hazard is abated. Manholes and confined spaces with limited ventilation must be power ventilated with a blower (minimum capacity 750 cfm) operating at its maximum rated speed for a minimum of 5 minutes. Larger confined spaces (greater than 1000 cubic feet) must be ventilated for at least 10 minutes. The blower must be in continuous operation while anyone is in the confined space.

**WARNING:** Hazardous substances that are produced by activities in the general area of a confined space can migrate to, and accumulate in the space, creating an unseen hazard to an unsuspecting entrant.



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The **potential** for a hazardous atmosphere to develop requires the space to be classified as a Permit-Required Confined Space

### CONFINED SPACES (PERMIT-REQUIRED)

A "permit-required confined space" is one that meets the definition of a confined space and has one or more of these characteristics:

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

#### Procedure:

Work involving entry to a confined space must be planned. An assessment of likely hazards should be made prior to commencing the work. Precautions must be taken to avoid exposure to harmful substances or oxygen deficient atmospheres. Some thought should also be given to handling possible emergencies.

#### ENTRY INTO PERMIT-REQUIRED CONFINED SPACES:

Prior to entry into any permit-required confined space, the employee's supervisor will issue a permit that specifies the location, type, and duration of the work to be done, and the date. The permit will certify that all existing hazards have been evaluated by the supervisor and that necessary protective measures have been taken for the safety of workers. It will provide documentation of the atmospheric testing that has been done. It will assign entry and attendant duties to specific persons.

Before issuing an entry permit, the employee's supervisor will be responsible for the following:

- Identify all hazards and potential hazards associated with the confined space, such as the danger of explosion, asphyxiation, toxic gases/fumes, engulfment or entrapment, electrical or mechanical hazards, etc.
- Isolate the space from potential hazards, if possible, to provide for safe entry.

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- Purge, inert, flush, ventilate to eliminate atmospheric hazards.
- Provide external barriers and warning signs.
- Perform pre-entry oxygen, flammable gas and toxicity air tests. All test results are to be recorded on the entry permit. If potential hazards cannot be isolated, continuous monitoring is required. If potential hazards can be isolated, periodic monitoring is required.
- Provide at least one trained attendant outside of each confined space that will be entered.
- Ensure that rescue and emergency services and equipment are in place as noted in this policy.
- Ensure that all required equipment is provided, maintained and properly used. This includes air monitoring equipment, forced air ventilation equipment, communications equipment, personal protective equipment (PPE), lighting, external barriers and warning signs, ladders, and rescue equipment.

If hazardous conditions are detected during entry, employees will immediately leave the space and the supervisor will determine the cause of the hazardous atmosphere and take corrective actions before allowing re-entry.

#### **RESCUE & EMERGENCY SERVICES:**

If proper protective measures are taken to eliminate and control any possible hazards in the confined space (i.e., ventilation, purging, monitoring, lock out/tag out, etc.), rescue operations should not be necessary. Nonetheless, the Facilities Department will be prepared for the worst-case scenario.

An attendant for the confined space will have access to a telephone or radio and know the proper procedure for alerting the proper personnel in the event of an emergency, including the fire department, paramedics, police, and others as necessary.

Provisions will be made and equipment provided to ensure timely extraction of an unconscious or injured worker from the confined space. This will include a body harness with a lifeline attached to a tripod and rescue winch. Under no circumstances is the attendant to enter the space to effect rescue; rescue operations must be left to trained personnel.

#### Training:

Employees involved with permit-required confined space work will be trained to assure the knowledge, understanding, and skills necessary for the safe performance of their duties. Proper precautions to be taken to assure safe entry and work in confined

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spaces. Employees entering confined spaces will be trained in the hazards and potential hazards involved and how to protect themselves from those hazards. They will be trained to never enter a confined space until a permit is issued and they have been

authorized to enter by the foreman. Attendants will be trained in their duties and responsibilities and the actions to be taken in the event of an emergency.

Employees will receive a written certification following their training to document that they have been properly trained in their respective duties and the hazards and safety precautions involved in confined space entry.

**Contractors:**

When the Facilities Department arranges to have employees of another employer (contractor) perform work that involves permit space entry, the host employer shall:

1. Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the OSHA regulations;
2. Apprise 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;
3. 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;
4. Coordinate entry operations with all contractors (including on-site contractors), when any combination of host employer personnel and/or contractor personnel will be working in or near permit spaces; and
5. 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.

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:

- a) Obtain any available information regarding permit space hazards and entry operations from SPS Facilities Department;

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- b) Coordinate entry operations with SPS Facilities Department, when both SPS personnel and contractor personnel will be working in or near permit spaces, as required; and
- c) Inform SPS Facilities Department 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.

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Policy:

All electrical work will be conducted in a manner consistent with existing regulations and with good standard practices. This section establishes standards for electrical operations.

Because electrical work has the potential for personnel electrocution and the potential hazard of catastrophic property damage, extreme caution must be exercised when working with electricity and electrical equipment. Electrical equipment can also cause fire because of its potential as an ignition source.

Fire is frequently caused by short circuits, overheating equipment and failure of current limiters, thermal sensors, and other safety devices. Explosions may occur when flammable liquids, gases, and dusts are exposed to ignition sources generated by electrical equipment.

Requirements:

1. Electrical installations and utilization equipment will be in accordance with the adopted edition of the National Electrical Code, National Fire Protection Association (NFPA 70); American National Standards Institute (ANSI) Standard C1. This code will also apply to every replacement, installation, or utilization equipment.
2. Equipment or facilities designed, fabricated for, and intended for use by Facilities Department personnel will be procured to meet the requirements of the National Electric Code.
3. Frames of all electrical equipment, regardless of voltage shall be grounded.
4. Exposed non-current carrying metal parts of electrical equipment that may become energized under abnormal conditions shall be grounded in accordance with the National Electrical Code.
5. Wires shall be covered wherever they are joined, such as: outlets, switches, junction boxes, etc.
6. Parts of electrical equipment which in ordinary operation produces arcs, sparks, etc., shall not be operated or used in explosive atmospheres or in close proximity to combustible materials.
7. Equipment connected by flexible extension cords shall be grounded either by a 3-wire cord or by a separate ground wire (except double insulated equipment).

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8. Ground fault circuit interrupters (GFCI) shall be used on all 120-volt, single-phase, 15- and 20-ampere receptacle outlets at job sites when the receptacles are not a part of the permanent wiring of the building or structure. Receptacles on a two wire, single-phase portable or vehicle-mounted generator rated not more than 5 kilowatt, where the circuit conductors of the generator are insulated from the generator frame and all or the grounded surfaces, need not be protected with GFCI's.

Inspections:

Supervisors will insure that work areas are inspected for possible electrical hazards.

Sufficient workspace shall be provided and maintained around electric equipment to permit safe operations and maintenance of such equipment.

Responsibilities:

a. Supervisors

1. All work hazards must be anticipated and all safeguards utilized.
2. Ensures that all employees are properly licensed, trained and instructed in the safe operation of electrical equipment and aware of all hazards associated with the use of these electrical devices.
3. Initiates any necessary administrative action required to enforce safety practices.
4. Requests assistance from Facilities Department Management regarding equipment operations which require unique safety practice instructions.

b. Employees

1. Follows the Facilities Department's electrical safety policies and procedures and instructions of responsible Supervisors and the Safety and Health Manager.
2. Brings to the attention of the supervisor and/or Health and Safety Branch potential hazardous situations such as discrepancies between instruction, procedures, policies and manual, faulty equipment, misapplication of device, etc.

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3. Electrical equipment known to be malfunctioning must be repaired or replaced before use. The repair must be initiated as soon as possible after the malfunction is noted.

4. Electricians with the SPS Facilities Department shall carry a valid NH State Electricians license and attend the required professional development/training necessary to maintain their licensure. The school will provide the cost for such license and continuing education. The employee will present a copy of their current license at their annual evaluation.

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**Policy:**

It is the policy of the Facilities Department to take all practical measures possible to prevent employees from being injured by falls from heights. The Facilities Department will take all necessary steps to eliminate, prevent, and control fall hazards. The Facilities Department will comply fully with the OSHA Fall Protection standard (CFR 1926, Subpart M, Fall Protection).

This policy will follow the OSHA standard for potential falls from heights of six feet and more. First consideration will be given to the elimination of fall hazards. If a fall hazard cannot be eliminated, effective fall protection will be planned, implemented, and monitored to control the risks of injury due to falling.

All personnel exposed to potential falls from heights will be trained to minimize their exposures. Fall protection equipment will be provided and used by all employees. Managers will be responsible for implementation of a fall protection plan for each job site.

**Fall Hazard Identification and Evaluation Responsibilities:**

The supervisor on each job site will be responsible for identifying fall hazards on their job site. The supervisor will evaluate each situation or work procedure where employees may be exposed to a fall of six feet or more. The supervisor will be responsible for developing a plan to eliminate the exposures, if possible, or to select the appropriate fall protection systems and/or equipment.

**Examples of Situations Requiring Fall Protection:**

The following are examples of situations where fall protection will be required. This listing is by no means complete, and there are many other situations where a fall of six feet or more is possible. It should be noted that ladders and scaffolding are not included in this list. They are covered by other OSHA standards and other requirements of our safety program.

- Wall Openings  
Any employee working near a wall opening (including those with chutes attached) where the outside bottom edge of the wall opening is 4 feet or more from a lower level, or the wall opening is less than 39 inches (1.0 meter) above the walking/working surface below, will be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.



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- Holes  
Personal fall arrest systems, covers, or guardrail systems shall be erected around holes (including skylights) that are more than six feet above lower levels.
- Leading Edges  
Each employee who is constructing a leading edge six feet or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems.
- Excavations  
Each employee at the edge of an excavation six feet or more deep shall be protected from falling by guardrail systems, fences, barricades, or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is six feet or more above the excavation.
- Form-work and Reinforcing Steel  
For employees, while moving vertically and/or horizontally on the vertical face of reinforcing bar (rebar) assemblies built in place, fall protection is not required when employees are moving. OSHA considers the multiple hand holds and foot holds on rebar assemblies as providing similar protection as that provided by a fixed ladder. Consequently, no fall protection is necessary while moving point to point for heights below 24 feet. An employee will be provided with fall protection when climbing or otherwise moving at a height more than 24 feet, the same as for fixed ladders.
- Hoist Areas  
Each employee in a hoist area shall be protected from falling six feet or more by guardrail systems or personal fall arrest systems. If guardrail systems (chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system.
- Overhand Bricklaying and Related Work  
Each employee performing overhand bricklaying and related work six feet or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems, or shall work in a controlled access zone. All employees reaching more than 10 inches (25 cm) below the level of a

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walking/working surface on which they are working shall be protected by a guardrail system, safety net system, or personal fall arrest system.

- **Ramps, Runways, and Other Walkways**  
Each employee using ramps, runways, and other walkways shall be protected from falling six feet or more by guardrail systems.
- **Low-slope Roofs**  
Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges six feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50 feet or less in width, the use of a safety monitoring system without a warning line system is permitted.
- **Steep Roofs**  
Each employee on a steep roof with unprotected sides and edges six feet or more above lower levels shall be protected by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.
- **Controlled Access Zones**  
A Controlled access zone is a work area designated and clearly marked in which certain types of work (such as overhand bricklaying) may take place without the use of conventional fall protection systems—guardrail, personal arrest or safety net—to protect the employees working in the zone.

Controlled access zones are used to keep out workers other than those authorized to enter work areas from which guardrails have been removed. Where there are no guardrails, masons are the only workers allowed in controlled access zones.

Controlled access zones, when created to limit entrance to areas where leading edge work and other operations are taking place, must be defined by a control line or by any other means that restrict access.

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Control lines shall consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

- Flagged or otherwise clearly marked at not more than 6-foot intervals with a high-visibility material
- Rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches from the walking/working surface and the highest point is not more than 45 inches --nor more than 50 inches when overhand bricklaying operations are being performed—from the walking/working surface
- Strong enough to sustain stress of not less than 200. Control lines shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- Control lines will be connected on each side to a guardrail system or wall.

When control lines are used, they shall be erected not less than 6 feet nor more than 25 feet from the unprotected or leading edge, except when precast concrete members are being erected. In the latter case, the control line is to be erected not less than 6 feet nor more than 60 feet or half the length of the member being erected, whichever is less, from the leading edge.

Controlled access zones when used to determine access to areas where overhand bricklaying and related work are taking place are to be defined by a control line erected not less than 10 feet nor more than 15 feet from the working edge. Additional control lines must be erected at each end to enclose the controlled access zone. Only employees engaged in overhand bricklaying or related work is permitted in the controlled access zones.

On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones will be enlarged as necessary to enclose all points of access, material handling areas, and storage areas.

On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

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### Fall Protection Systems:

When there is a potential fall of six feet or more, the Employees will utilize one or more of the following means of providing protection:

- Guardrail Systems

Guardrail systems must meet the following criteria. Toprails and midrails of guardrail systems must be at least one-quarter inch nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for toprails, it must be flagged at not more than 6 feet intervals with a high-visibility material. Steel and plastic banding will not be used as toprails or midrails. Manila, plastic, or synthetic rope used for toprails or midrails must be inspected as frequently as necessary to ensure strength and stability.

The top edge height of toprails or (equivalent) guardrails must be 42 inches plus or minus 3 inches, above the walking/working level. When workers are using stilts, the top edge height of the top rail, or equivalent member, must be increased an amount equal to the height of the stilts.

Screens, midrails, mesh, intermediate vertical members, or equivalent intermediate structural members must be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches high. When midrails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking/working level. When screens and mesh are used, they must extend from the top rail to the walking/working level and along the entire opening between top rail supports. Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches apart.

Other structural members, such as additional midrails and architectural panels, shall be installed so that there are no openings in the guardrail system more than 19 inches.

The guardrail system must be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction. When the 200 pound test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches above the walking/working level.

Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding a force of at least 150 pounds

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applied in any downward or outward direction at any point along the midrail or other member.

Guardrail systems shall be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.

The ends of top rails and midrails must not overhang terminal posts, except where such overhang does not constitute a projection hazard.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section must be placed across the access opening between guardrail sections when hoisting operations are not taking place.

At holes, guardrail systems must be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall have not more than two sides with removable guardrail sections. When the hole is not in use, it must be covered or provided with guardrails along all unprotected sides or edges.

If guardrail systems are used around holes that are used as access points (such as ladderways), gates must be used or the point of access must be offset to prevent accidental walking into the hole.

If guardrails are used at unprotected sides or edges of ramps and runways, they must be erected on each unprotected side or edge.

#### Personal Fall Arrest Systems:

These consist of an anchorage, connectors, and a body belt or body harness and may include a deceleration device, lifeline, or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

- Limit maximum arresting force on an employee to 900 pounds when used with a body belt
- Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness
- Be rigged so that an employee can neither free fall more than 4 feet nor contact any lower level
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet

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- Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 4 feet or the free fall distance permitted by the system, whichever is less.

**The use of body belts for fall arrest is prohibited** and a full body harness is required. Personal fall arrest systems must be inspected prior to each use for wear damage, and other deterioration. Defective components must be removed from service.

Positioning Device Systems: These body belt or body harness systems are to be set up so that a worker can free fall no farther than 2 feet. They shall be secured to an anchorage capable of supporting a least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Safety Monitoring Systems: When no other alternative fall protection has been implemented, the Facilities Department shall implement a safety monitoring system. The Supervisor will appoint a competent person to monitor the safety of workers and shall ensure that the safety monitor:

- Is competent in the recognition of fall hazards;
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices;
- Is operating on the same walking/working surfaces of the workers and can see them;
- Is close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.
- Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

All workers in a controlled access zone shall be instructed to promptly comply with fall hazard warnings issued by safety monitors.

Safety Net Systems: Safety nets must be installed as close as practicable under the walking/working surface on which employees are working and never more than 30 feet (9.1 meters) below such levels. Defective nets shall not be used. Safety nets shall be

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inspected at least once a week for wear, damage, and other deterioration. Safety nets shall be installed with sufficient clearance underneath to prevent contact with the surface or structure below.

Items that have fallen into safety nets including—but not restricted to, materials, scrap, equipment, and tools—must be removed as soon as possible and at least before the next work shift.

Warning Line Systems: Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot intervals with a high-visibility material;
- Rigged and supported so that the lowest point (including sag) is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface.
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge;
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, must support without breaking the load applied to the stanchions as prescribed above.
- Shall be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over.

Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation.

When mechanical equipment is not being used, the warning line must be erected not less than 6 feet from the roof edge.

Covers: Covers located in roadways and vehicular aisles must be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected. All other covers must be able to support at least twice the weight of

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employees, equipment, and materials that may be imposed on the cover at any one time. To prevent accidental displacement resulting from wind, equipment, or workers' activities, all covers must be secured. All covers shall be color coded or bear the markings "HOLE" or "COVER."

Protection from Falling Objects: When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of potential falling objects. No materials or equipment except masonry and mortar shall be stored within 4 feet of working edges. Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear of the working area by removal at regular intervals.

During roofing work, materials and equipment shall not be stored within 6 feet of a roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge must be stable and self-supporting.

Training: Employees will be trained in the following areas:

- (a) The nature of fall hazards in the work area;
- (b) The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems;
- (c) The use and operation of controlled access zones and guardrail, personal fall arrest, safety net, warning line, and safety monitoring systems;
- (d) The role of each employee in the safety monitoring system when the system is in use;
- (e) The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- (f) The correct procedures for equipment and materials handling and storage and the erection of overhead protection; and,
- (g) The Employees' role in fall protection plans.



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**Policy:**

All mechanical motion is potentially hazardous. Motion hazards, such as rotating devices, cutting or shearing blades, in-running nip points, reciprocating parts, linear moving belts and pulleys, meshing gears, and uncontrolled movement of failing parts, are examples of motion and peculiar to any one machine or job operation. Personnel working within areas where they are exposed to machinery or equipment hazards must be aware of the potential for accidents. Machine operators and others are exposed to moving parts and can get clothing or body parts caught in the machinery.

**Personnel Training:**

Personnel will be trained to:

1. Safely operate each machine they will be required to use
2. To recognize potential accident producing situations, and
3. To know what to do when hazards are discovered.

Only personnel who have been thoroughly trained, or those who are undergoing supervised on-the-job training on the equipment, will be permitted to operate machinery.

**Personal Protective Equipment:**

Eye protection or face shields will be worn by all personnel within areas where machines are operated.

Loose fitting clothing, neckties, rings, bracelets, or other apparel that may become entangled in moving machinery will not be worn by machine operators or their helpers.

Hair nets or caps will be worn to keep long hair away from moving machinery.

Gloves will not be worn where there is a chance of them being caught in machinery.

Hearing protection will be used when required for worker protection.

The Safety Coordinator should be contacted to assist Supervisors in determining personnel protective equipment needs.

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**Environmental:**

Machines designed for fixed locations will normally be securely fastened to the floor or other suitable foundation to eliminate all movement or "walking." Machines equipped with rubber feet, non-skid foot pads, or similar vibration dampening materials will be installed according to the manufacturer's recommendations.

Machines that have the potential of tipping or falling over will be firmly secured.

Machines that develop fine dust and fumes will be equipped with effective exhaust hoods or connected to an effective exhaust system. An interlocking device should be installed to link the machine's power supply and the exhaust system to prevent the operation of machines without the exhaust system operating.

Machines will never be left unattended with the power on unless the worker is operating more than one machine in a battery of machines. In this latter instance, the clear zone will be appropriately marked to include all machines in the group.

No attempt will be made to clean any part of a machine until the moving parts have come to a complete stop. Chips will not be removed from machinery by hand. Hand brushes should be used but compressed air may be used when reduced to less than 30 psi and then only with effective chip guarding and personal protective equipment.

Brushes, swabs, lubricating rolls, and automatic or manual pressure guns will be used by operators to lubricate material, punches, or dies. This equipment will be used so that operators are not required to reach into the point of operation or other hazardous area.

**Housekeeping:**

Floors will be kept in good repair and free of chips, dust, metal scraps, and other slipping and tripping hazards.

Waste containers will be emptied daily or more often, if necessary, to prevent excessive waste accumulations.

All materials, including usable scrap, will be stored so that they will not present a hazard.

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Drip pans will be used whenever equipment must be oiled. Machinery will not be in motion when being lubricated unless lubrication is automatic or a long gravity flow spout is used, enabling the oiler to remain in the clear while performing this task.

#### **Material Handling:**

Trucks used for scrap disposal will not be overloaded, and scrap will not extend beyond the ends or sides of trucks.

When materials are of a weight or size which makes manual lifting hazardous, mechanical handling equipment will be used.

#### **Maintenance and Repair:**

When maintenance or repair is needed, machines will be completely shut down and the control switch(es) locked and tagged in the "OFF" position. Consult the Facilities Department Lock Out/Tag Our policy for guidance.

Cutting tools will be kept sharp and forming tools well dressed and free from accumulations of chips, dust, and other foreign matter. Where two or more cutting tools are used in one cutting head, they will be properly adjusted and balanced.

Damaged cutting tools will be removed from service and will not be used until repaired.

#### **Machine Usage:**

Machines will be used only for work within the rated capacity specified by the machine manufacturer and for the machines intended purpose.

Machines will be maintained so that while running at full or idle speed, with the largest cutting tool attached, they are free of excessive vibration.

No saw blade, cutter head, or tool collar will be placed or mounted on a machine arbor, unless it has been accurately sized and shaped to fit the arbor.

#### **Electrical Safeguards:**

The motor "START" button will be protected against accidental/inadvertent operation. "START" buttons will not be wedged for continuous operation.

The wiring and grounding of machinery will be in accordance with the National Electric Code.

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Each machine will have a positive electrical disconnect or isolation switch which can be locked out. Electrically driven machines will be equipped with undervoltage protective systems to preclude automatic restart after either a power failure or other under voltage condition.

#### **Machine Controls:**

Foot pedal mechanisms will be located and guarded so that they cannot be activated by falling objects or other accidental means. A pad with a non-slip contact area will be firmly attached to the pedal.

Controls will be available to the workers at their operating positions so that they do not reach over moving parts of the equipment. Control functions will be identified by printed words and color coding. Controls will not be wedged for continuous operation. Power controls must have a way of locking out electrical power. Disconnecting or isolating switches will be mounted on a visible side of, or near, the machine and will be used to lock out power to the machine during repairs or adjustments. When the power is locked out, the isolating switch will be tagged.

#### **Machine Guards:**

Machine guards are designed to protect employees from hazards of moving machinery. All hazardous areas of a machine shall be guarded to prevent accidental "caught in" situations. References: General Requirements for all Machines (29 CFR 1910.212), Woodworking Machinery (29 CFR 1910.213), Abrasive Wheels (29 CFR 1910.215), Power Presses (29 CFR 1910.217), Power Transmission (29 CFR 1910.219).

Many accidents are caused by machinery that is improperly guarded or not guarded at all.

The following areas of machinery will be provided with barriers and/or enclosures that will effectively prevent personnel from coming in contact with moving components:

- a) Point of operation exposures such as blades, knives and cutting heads.
- b) Power transmission exposures such as belts, pulleys, shaft, gears, etc.
- c) Top, bottom and backside exposures, such as the underside of table saws and the wheels on band saws.
- d) When a point-of-operation guard cannot be used because of unusual shapes or cuts, jigs or fixtures which will provide equal safety for the operator will be used.

Whenever a guard is removed for other than an operational requirement, the machine will be shut down and the control switch(es) locked and tagged in the "OFF" position. Guards will be affixed to the machine. Where possible, the guards will be of the hinged type to enhance maintenance or adjustments.

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### Definition of Terms

1. Guards: Barriers that prevent Employees from contact with moving portions or parts of exposed machinery or equipment which could cause physical harm to the Employees.
2. Enclosures: Mounted physical barriers which prevent access to moving parts of machinery or equipment.
3. Point-of-Operation: The area on a machine or item of equipment, where work is being done and material is positioned for processing or change by the machine.
4. Power Transmission: Any mechanical parts which transmit energy and motion from a power source to the point-of-operation. Example: Gear and chain drives, cams, shafts, belt and pulley drives and rods. NOTE: Components which are (7) feet or less from the floor or working platform shall be guarded.
5. Nip Points: In-Running Machine or equipment parts, which rotate towards each other, or where one part rotates toward a stationery object.
6. Shear points: The reciprocal (back and forth) movement of a mechanical part past a fixed point on a machine.
7. Rotating Motions in an exposed mechanism are dangerous unless guarded. Even a smooth, slowly rotating shaft or coupling can grasp clothing or hair upon contact with the skin and force an arm or hand into a dangerous position. Affixed or hinged guard enclosure protects against this exposure.
8. Reciprocating motions are produced by the back and fourth movements of certain machine or equipment parts. This motion is hazardous, when exposed, offering pinch or shear points to an employee. A fixed enclosure such as a barrier guard is an effective method against this exposure.
9. Transverse Motions: Transverse motions are hazardous due to straight line action and in-running nip points. Pinch and shear points also are created with exposed machinery and equipment parts operating between a fixed or other moving object. A fixed or hinged guard enclosure provides protection against this exposure.
10. Cutting Actions: Cutting action results when rotating, reciprocating, or transverse motion is imparted to a tool so that material being removed is in the form of chips. Exposed points of operation must be guarded to protect the operator from contact with cutting hazards, being caught between the operating parts and from flying particles and sparks.
11. Shearing Action: The danger of this type of action lies at the point of operation where materials are actually inserted, maintained and withdrawn.

206.01	<b>MACHINERY &amp; MACHINE GUARDING</b>
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### Machine Guarding Requirements

1. Guards shall be affixed to the machine where possible and secured.
2. A guard shall not offer an accident hazard in itself.
3. The point-of-operation of machines whose operation exposes an employee to injury shall be guarded.
4. Revolving drums, barrels and containers shall be guarded by an enclosure which is interlocked with the drive mechanism.
5. When periphery of fan blades are less than 7 feet above the floor or working level the blades shall be guarded with a guard having openings no larger than 1/2 inch.
6. Machines designed for a fixed location shall be securely anchored to prevent walking or moving. For example; Drill Presses, Bench Grinders, etc.

### General Requirements for Machine Guards

1. Guards must prevent hands, arms or any part of an employees body from making contact with hazardous moving parts. A good safeguarding system eliminates the possibility of the operator or other employees from placing parts of their bodies near hazardous moving parts.
2. Employees shall not remove, modify or defeat any machine safety guard or interlock. Any machine with a missing, malfunctioning guard or interlock shall be placed out of service until repairs are made.
3. Guard should ensure that no objects can fall into moving parts. An example would be a small tool which is dropped into a cycling machine could easily become a projectile that could injure others.
4. Guard edges should be rolled or bolted in such a way to eliminate sharp or jagged edges.
6. Lubrication points and feeds should be placed outside the guarded area to eliminate the need for guard removal.

### Training

All employees shall be provided training in the hazards of machines and the importance of proper machine guards. Machine safety and machine guarding rules will be thoroughly explained as part of the new hire orientation program and annually as refresher safety training.

207.01	<b>PLUMBING &amp; PIPEFITTING SAFETY</b>
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**Policy:**

Plumbing operations normally includes the installation, preventive maintenance, and repair of water supply systems, sewage and water disposal systems, natural liquefied petroleum gas (LPG) or other gas supply systems (to include gas appliances), and oxygen supply systems. These systems and the maintenance of them contribute to the total well-being of all School facilities.

Hazards encountered during plumbing operations include, but are not limited to, entry into an oxygen deficient atmosphere (confined space), fire or explosion (by introducing an ignition or flame source into a hazardous environment), and falls. Cave-in of an excavated area, burns from heat producing equipment, strains and sprains of the back (or other muscle group), and cuts and/or bruises, are also potential dangers.

Working in confined spaces, handling heavy and awkward materials, being subjected to numerous obstructions in limited working space, and health related hazards are conducive to producing accidents. Plumbing maintenance workers need to be knowledgeable of these potential hazards and conditions and take reasonable actions to prevent incidents before they occur.

**Personal Protective Equipment:**

Personal protective equipment worn during plumbing maintenance operations normally consists of eye and/or face protection, work or chemical resistant gloves, and safety-toe shoes. A bump cap or hard hat may be required under conditions that could result in head injuries (e.g., work in manholes and in close spaces with low overhead pipe or other obstructions).

Eye or face protection is required while working plumbing connections, with chemicals, or where an eye hazard could exist while using tools or machines, and while working on pressure systems.

The use of hearing protection shall be considered during loud noise producing operations. The use of barrier protection as described in the Bloodborne Pathogen policy shall be considered when working on and around sewer lines.

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Procedures:

Hot Operations- A "Hot Work Permit" is required from the Trades Manager for work of this nature.

1) Torches and Furnaces

- a) Only essential fire prevention items pertaining to the operation of blowtorches and plumber's furnaces are included. Work and storage areas for this equipment shall be well ventilated.
- b) No one shall be permitted to use a torch or furnace until the user is trained on its use and is familiar with the operating instructions.
- c) Where flammable or explosive vapors or dust may be present, torches and furnaces shall not be used until the atmosphere has been vented and the sources of such vapors or dust removed.
- d) Gasoline blowtorches and furnaces shall not be used. Acetylene gas shall never be brought in contact with metal powders such as copper or silver as the combination may produce flashes which can ignite explosive atmospheres.
- e) Combustible materials in locations where torches or furnaces are to be used shall be protected or kept far enough away to prevent their being subjected to sparks or dangerous temperatures. Appropriate fire extinguishers shall be available.
- f) Every attempt shall be made to minimize the impact on existing fire protection features in a building during hot work. For example, placing a protective cap or hood on several smoke alarms rather than shutting down an entire system would allow the majority of the building and it's occupants to remain protected during the hot work.

2) Soldering and Brazing

- a) Soldering and brazing is the joining of metal parts by melting a fusible alloy. When solders used have a melting point above 800 degrees F, the procedure is called brazing.

Improper equipment and/or unsafe practices may cause lead poisoning, irritation from fluxes, burns, electric shock, or fires. The concentration of toxic fumes and irritants at the



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breathing level of the operation shall be checked. Where required because of toxic fumes, a respirator or adequate ventilation shall be provided. Lead-tin, zinc, silver, cadmium, and antimony-tin solders can pose moderate to serious health hazards.

Soldering, particularly with lead-tin, in a confined space where ventilation is not adequate to remove toxic fumes may require the use of a self-contained breathing device. The Environmental Health and Safety Manager shall be consulted for evaluation of potential health hazards and recommendations on respiratory protection during welding, soldering, and brazing operations.

- b) Electric soldering irons shall be grounded unless of double insulation construction. All soldering irons shall be placed in suitable non-combustible receptacles when not in use.
- c) Appropriate safety eyewear shall be worn during all soldering and brazing operations.

#### Open Storm Drains Procedures:

Plumbing personnel are not likely to come in contact with the hazards associated with sewer systems while working on open storm drains. However, there are certain hazards associated with that type of drainage system. Some of these hazards and their associated incidents are:

##### a. Manhole covers

Manhole covers are heavy and closely fitted to the manhole opening. Never attempt to lift a cover without using proper pry bar tools, special lifting tools, and additional help where needed. Ensure fingers and toes do not remain under manhole covers when putting them down.

##### b. Hazards

Insects, animals, and snakes have been known to nest or den in storm drains. Hazards encountered are:

- Stings from wasps, spiders, and ants that could lead to toxic shock.
- Bites from animals that could lead to rabies.
- Bites from poisonous snakes that could be fatal or cause gangrene.

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Requirements:

Prior to working in storm drains, inspect and clear the drains of dangerous insects, animals, or snakes.

Wear proper protective clothing, hard hats, boots, and gloves while working in storm drains.

Gas Systems:

Maintenance of gas systems includes natural gas, LPG, and oxygen. Shop personnel shall be familiar with the properties of the gases in the systems they maintain. Until proven otherwise, all escaping gases shall be considered flammable. Prior to entering an area where a gas leak is suspected, the area shall be properly vented and purged of existing gas. Personnel entering the area shall be suited with proper protective clothing and self-contained breathing devices.

For oxygen deficient atmospheres, air supply systems with a special emergency escape air supply are required and shall be used. Tools used to repair leaks in or perform maintenance on gas lines shall be spark-free and protective clothing shall be static-free. When working on oxygen dispensing lines, workers shall not use tools and equipment that are coated with lubricating substances or grease.

Tunnels, Pits, and Sumps:

Where Facilities personnel are required to work in utility tunnels, pits, and sumps, the atmospheric conditions shall be checked for explosive atmosphere or oxygen deficiency before allowing them to enter. Personnel shall be suited with proper protective clothing and respiratory protective devices, when required, while performing maintenance to underground utilities.

All tunnels, pits, or sumps known to be contaminated shall be tagged or identified for the information of work crews. Workers shall be assigned in pairs for work performed on underground utilities and all known contaminated tunnels, pits, and sumps shall be ventilated while work is in progress.

When a manhole or vault is open, at least one member of the crew shall be stationed at the surface. This person shall not, under normal circumstances, leave for any purpose.

**NOTE: UNDER NO CIRCUMSTANCES SHALL A PERSON ENTER A SUBSURFACE STRUCTURE FOR ANY REASON WITHOUT A SECOND PERSON TO ACT AS A GUARD AND TO OBTAIN ASSISTANCE IN THE EVENT OF AN EMERGENCY.**

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In areas where removal of a victim would be difficult, an approved lifeline, equipped with a wrist harness, shall be worn by the person entering the area to facilitate rapid removal in case of an emergency.

**Training and Certification –**

Plumbers with the SPS Facilities Department shall carry a valid NH State Plumbers license and attend the required professional development/training necessary to maintain their licensure. The school will provide the cost for such license and continuing education. The employee will present a copy of their current license at their annual evaluation.

301.01	<b>LANDSCAPING &amp; GROUNDS MAINTENANCE SAFETY</b>
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**Policy:**

Landscaping and grounds maintenance involves the use of various sizes and types of lawnmowers, grass/weed cutting tools, edgers, hedge clippers and other hand tools. The most significant dangers are being injured by the blade or a foreign object thrown by the high speed blades and noise-induced hearing loss.

**Procedures:****1. Personal Protective Equipment and Safeguards**

Workers shall wear face shields or safety goggles or glasses with side shields, safety-toe boots, and hearing protection during the operation of all lawn mowers. Gloves may be worn when using walk-behind mowers. Bump caps should be worn when using a riding or towed mower around tall brush and low hanging tree limbs. All mower discharge chutes shall be guarded with shields or approved grass catchers to deflect or stop foreign objects during operation.

**2. Operating Practices Applicable to Push, Self-Propelled, and Riding Mowers**

a. Operators shall be trained and qualified to operate the different type(s) of mowers available. Manufacturer's instructions and operating procedures shall be followed.

b. Prior to mowing, operators shall clear the area to be mowed of all people and inspect for foreign objects, raised sprinkler heads, holes, soft ground, and obstructions.

c. Mowers shall not be left running unattended. For riding mowers, the engine shall be shut off and all drives disengaged prior to getting off the mower. No riders are permitted on riding lawn mowers. The engine on push and self-propelled mowers shall be turned off while moving to another job location or while passing over curbs, loose gravel, or other similar obstructions. Power to attachments shall be disengaged on riding or towed mowers while passing over similar obstructions and when travelling over unobstructed areas and roads on the way to the next job site or return to the shop.

d. Mower blades cutting height should normally be set as near to 2 inches as possible. Blades shall never be set lower than 1 ½ inches.

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## 2. Operating Practices Applicable to Push, Self-Propelled, and Riding Mowers (continued)

e. When mowing hills and slopes, operators shall know the special precautions to follow. Slopes, hills, or banks exceeding a 30 degree angle shall be mowed with a push or self-propelled walk-behind mower in a horizontal (across) direction.

f. Electric hedge clippers shall be inspected, cleaned, oiled, and sharpened as required when in use. A grounded power cord shall be used if the tools are not double insulated. The cord shall be inspected before use and daily for condition. The cord shall be kept away from the cutting surface and out from under the feet of the operator. The cutting teeth of the clipper shall not be pointed toward the body of the operator. The unit shall be shut off and unplugged while moving from job to job. Gloves shall be worn when operating hedge clippers. No electric power tool shall be operated in rain, sprinklers, or any kind of precipitation.

## 3. General Rules for Maintaining Lawn Care Equipment

a. Always refuel with engines off and allow the engine to cool first. Do not permit smoking in the area. Refuel mowers prior to use versus refueling prior to storing inside a building. Complete refueling outside, at least 10 feet away from the building or any open flame.

b. Use boards or ramps to load and unload mowers from vehicles ensuring the engine is off and the spark plug wire is disconnected. Always shut off the fuel supply line when parking mowers inside or outside at the end of the day. As storage space permits, leave 1 to 3 feet separation space between parked gasoline-operated riding mowers.

c. Clean mowers or perform other maintenance on mowers only after turning engine off and disconnecting the spark plug wire.

d. Use manufacturer's guidelines for operation and use of mowers.

## 4. Tractor Operations

a. Roll-over protective structures (ROPS) are required on tractors used for landscape maintenance. Seat belts shall be installed on all ROPS-equipped tractors and used whenever the vehicle is in motion.

b. When pulling a load, operators shall hitch only to the draw bar. The draw bar hitch shall be kept at least 13 inches, but less than 17 inches, off the ground.

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#### 4. Tractor Operations (continued)

- c. When moving a front load, the load shall be kept low to the ground and the rear wheels as level as possible.
- d. Operators shall avoid holes and obstacles; both on the ground and overhead. Speed shall be reduced with heavy loads when vision is limited or when operating on rough terrain.
- e. When stuck, operators shall try carefully to back out. Increasing engine speed or fastening a post to the rear wheels greatly increases the chances of tipping over backward; therefore, these methods shall not be used. Operators shall get help if needed.
- f. Grass shall not be mowed with a tractor on slopes greater than a 4-inch rise or drop per foot of travel. Lower gears shall be used when going downhill and the wheels shall be allowed to control the tractor speed.
- g. The engine shall be shut off before the operator dismounts from the tractor or makes adjustments to either the tractor or towed equipment.
- h. Riders shall not be allowed on tractors, on the draw bar, or on towed equipment, except where the equipment is specifically designed to allow riders or passengers.
- i. Fenders are guards for the worker's protection. Fenders shall be kept in place at all times.
- j. Tractors shall only be left on an incline after the engine has been turned off, gear shift has been placed in park position (or the lowest gear if standard transmission), and the wheels have been braked and blocked. Where possible, tractors shall be parked on level ground.
- k. The power take-off guard shall always be in place.
- l. Hearing protection and safety-toe shoes shall be worn by the operator, when required. The Safety Coordinator should be consulted to determine the need for respiratory protection.

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#### 5. Fertilizer Storage and Handling

Fertilizer can become a very combustible material and, at temperatures in excess of 130 degrees F, it may explode. When fertilizers become wet and start to decompose, they give off a gas that will burn. Some fertilizers give off a very toxic gas when burning. No more than 2,500 pounds of fertilizer shall be stored in a building unless that building is equipped with an automatic sprinkler system.

#### 6. Snow Blower Operations

- a. Hearing protection will be used while operating a snow blower
- b. The snow blower will be shut down prior to placing hands or hand held objects in or near the auger device(s).
- c. The operator shall remain aware of discharging objects other than snow towards buildings or people when snow blowing. Operators will also be aware of required exit points of buildings and not discharge snow into those areas without immediately removing snow from the doorway and pathway.