SEI SOLUTIONS, LLC

Health and Safety Program

(Revised 3/20/2023)

SEI Solutions LLC
284 W 1050 N • Chesterton, IN 46304
Office: 219.764.9800 • Fax: 219.764.3080

SEI Solutions, LLC
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5.13. Pandemic Disease Plan

6. Table A: Document History

SEI Solutions, LLC
Safety and Health Policy Statement

We are dedicated to providing a safe and healthful environment for employees and customers, protecting the public and preserving SEI Solutions, LLC assets and property.

At SEI Solutions, LLC our most valuable resource are the people who work for us. Injuries can be prevented. To achieve this objective, SEI Solutions, LLC will make all reasonable efforts to comply with all government regulations pertaining to safety and health issues. An effective Safety and Health Program will be carried out throughout our organization.

The Safety and Health Program will assist management and non-supervisory employees in controlling hazards and risks which will minimize employee and customer injuries, damage to customer's property and damage or destruction of SEI Solutions, LLC property.

All employees will follow this program. This program is designed to encourage all employees to promote the safety of their fellow employees and customers. To accomplish our safety and health goals, all members of management are responsible and accountable for implementing this policy, and to insure it is followed.

SEI Solutions, LLC is sincerely interested in the employee's safety. The policy of SEI Solutions, LLC is to provide safe equipment, adequate tools and training, and the necessary protective equipment. It is the employee's responsibility to follow the rules of safety as established for their protection and the protection of others, and to use the protective devices, which SEI Solutions, LLC provides.

_____ _____

President Date

SEI Solutions LLC
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Safety Education and Training Program

SEI Solutions, LLC is committed to instructing all employees in safe and healthy work practices. SEI Solutions, LLC 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.

Training Will Occur When:

- Upon Hiring
- SEI Solutions, LLC believes additional training is warranted
- An employee is given a new job assignment
- New substances, equipment, or new procedures are introduced which represent a new hazard
- SEI Solutions, LLC is made aware of a new hazard
- Employee commits an unsafe act demonstrating that an understanding of the training is not present.

Training Areas:

The types of employee training will include new employee orientation, updates, customer specific training, periodic safety meetings, and specialized contracted training. Training consists of verbal discussion, written and verbal test to show understanding. PowerPoint Presentations, Video's and hands on training are also used to verifying understanding of training. First Aid, CPR & Blood borne Pathogens training is sub-contracted through American Heart Association CPR and First Aid Training. The Safety and Health training provided to employees will include all topics listed on the attached Employee Training Record, which will be used to document all training:

New Hire Orientation Training Record

First Name:	Today's Date:
Middle Name:	Position:
Last Name:	Driver Licence #:
Current Address:	Driver Licence Expiration Date:
City, State. Zip:	Cell Phone #:
DOB:	Social Security: XXX-XX- ___ ___ ___ ___

Issued Fall Protection Equipment:	Harness Tag No. _____	Lanyard Tag No. _____

Full Face Mask Size:	☐ Small	☐ Medium	☐ Large	☐ X-Large	**Fit Test Date:**
Half-Face Mask Size:	☐ Small	☐ Medium	☐ Large	☐ X-Large	**Fit Test Date:**

Topic	Empl. Initials	Instr. Initials	Topic	Empl. Initials	Instr. Intials
OSHA Introduction			PPE		
Hazard Communication			Confined Space Entry/Attendant		
Walking Working Surfaces			Lock-out/ Tag-out		
Emergency Action Plan/Exit Routes/Fire Protection			Respiratory Protection		
Fall Protection			Bloodborne Pathogens		
Scaffold User			**Waterblasting Awareness**		
Stairways and Ladders			**Vacuum Awareness**		
Trailer/Towing Safety			ArcelorMittal Orientation		
Atmospheric Monitoring			United States Steel Training Date:_____		
Electrical Hazards			Unilever Orientation Date:_____		
Gas Hazards			Grace Industries Orientation Date:_____		
Hands On Training: Waterblast/Vacuum/Confined Space					

Fill in Appropriate Information Below, N/A if Does Not Apply

TWIC Card Exp:_____	Arcelor Badge Number:_____	US Steel Badge: (Yes/No)_____

I have received the above listed training, have successfully completed the required testing, and have a firm understanding of all the above topics. I have no questions about the topics presented and feel that I have been adequately trained to fulfill my duties in a safe and professional manner. Furthermore, I understand that if I develop questions or are unsure of the correct or safe manner in which to perform a task, I have been advised to contact my supervisor. I also understand that my safety and the safety of others is the single greatest concern, and I agree that I will not knowingly or intentionally endanger myself or others and will seek guidance from my supervisor or OSHA when unsure of the safe or correct manner in which to perform an assigned duty or when a situation appears unsafe. I understand that I have the right to refuse to do something which I feel is unsafe.

Employee Signature:	Date:

Revised 09/2019

The 10 Hr OSHA Construction course is part of New Hire Orientation.
40 & 8-hour Hazwoper training is conducted when necessary.

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Supervisor Training Program

SEI Solutions recognizes the responsibilities and obligations placed on its field supervisors to not only complete the job safely and efficiently but also comply with all federal, state, local, and customer rules and regulations. It is for this reason SEI Solutions has developed a Supervisor Training Program to train and develop our supervisors. The following is an outline for this training:

Supervisor Training Outline

Section I **Management Duties**
Leading by example
Ethical decisions
The effects of Supervision

Section II **Safety**
Responsibilities of Supervision
Safety effects on profit
A Supervisors legal responsibility
Inspections and the effects
Job Safety Analysis
Training
Safety Meetings
DOT Responsibilities

Section III **Accountability of Supervision**
Performance evaluations
Discipline, unacceptable behavior
Recognition, expectation behavior

Section IV **Accident Reporting**
Accident reporting and Investigation
Employees accident report
Supervisors accident report
Safety Managers accident report

Section V **Procedures**
Variance Procedure
Hydroblast Procedures
Vacuuming Procedures
Confine Space Procedures

Organizational Chart and Training Requirements

Supervisor		Must have hydro blast training and a CDL or a current 40 hr. Hazwoper
Foreman		Must have hydro blast training or a CDL or a current 40 hr. Hazwoper
Operator		Must have CDL and vacuum truck training;
Env. Tech.		Must have OSHA ten, company orientation and current Hazwoper
Hydro blast Tech.		Must have OSHA ten, company orientation and hydro blast training
Technician		Must have OSHA ten and company orientation

Minimum qualifications to perform each job function are listed in the chart. This may be a combination of education and work experience.
Documentation must be acquired from employees as proof they are qualified to perform their job duties. The documentation is kept in the employees file and in the company training matrix. Job specific training must be provided for new or transferred employees. All employees must be trained on the tasks they perform on a regular basis.
A competent person (Supervisor, Safety Manager, etc.) must verify that an employee is competent to perform their roles and responsibilities before being allowed to work independently.

Safety and Health Communication
Communicating With Employees on Safety and Health Issues

Communicating with employees regarding health and safety issues must be a two way street. It must consist of both employer-to-employee **and** employee-to-employer communications. Employees will be trained through the formal Safety and Health Program, new employee orientation, and training specific to new or current job assignments and/or hazards.

Reporting of Safety and Health Hazards:

SEI Solutions, LLC has a system for the employee to report a hazard or unsafe condition. The form on the next page will be used for reporting and documenting such hazards. The employee should also notify his/her immediate supervisor verbally of such hazard or condition. The "Safety Suggestion Form" will be sent to the employee's supervisor or designated Safety Manager. A prompt and thorough investigation will be conducted of the situation.

Postings:

As a routine part of the Safety and Health Program, 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 employee areas.

Training:

SEI Solutions, LLC 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 the chapter entitled Safety Education and Training Program.

Employee Safety Handbook:

All employees will be provided with an Employee Safety Handbook before they are to begin work and at the time of orientation. They are to read the handbook and acknowledge its receipt by filling out the second page of the handbook. This page will be removed from the handbook and placed in their personnel record.

SAFETY SUGGESTION FORM

NAME: _____ DATE: _____
(OPTIONAL)

DESCRIPTION OF UNSAFE CONDITION OR PRACTICE:

_____
_____
_____
_____
_____.

CAUSE OR CONTRIBUTING FACTORS:

_____
_____.

SUGGESTION FOR IMPROVING SAFETY:

_____
_____.

Draw a picture to describe situation:

Safety Inspection Checklist

Inspected By: _____ Date: _____

(Mark N/A as appropriate)

1. WORK SITE INFORMATION:
   a. Posting OSHA and other work site warning posters _____
   b. Are Safety Meetings conducted periodically? When was the last meeting? _____
   c. First aid equipment properly stocked _____
   d. Are work site injury records being kept? _____
   e. Are emergency telephone numbers conspicuously posted? _____
   f. Is the EMERGENCY INFORMATION form posted? (Page 8) _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

2. HOUSEKEEPING AND SANITATION :
   a. Are emergency lights fully operational? _____
   b. General neatness of working areas _____
   c. Regular disposal of waste and trash _____
   d. Passageways and walkways clear _____
   e. Waste containers provided and used _____
   f. Sanitary facilities adequate and clean _____
   g. Adequate supply of water _____
   h. Adequate lighting _____
   i. Trash receptacle for drinking cups _____
   j. Are handrails and stair treads in good repair? _____
   k. Is smoking restricted to certain locations? _____
   l. Are electrical cords and plugs in good condition? _____
   m. Is a clearance of 3’ maintained around hot water heaters electric breaker panels, heating units, and fire sprinkler riser? _____
   n. Are electric circuit breakers free of obstructions? _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____

3. FIRE PREVENTION:
   a. Fire instruction to personnel _____
   b. Fire extinguishers identified, accessible, and fully charged _____
   c. "No Smoking" signs posted and enforced where needed _____
   d. Good housekeeping _____
   e. Storage, use and handling of flammable liquids properly done _____
   f. Fire hazards checked _____
   g. Is gasoline contained only in UL listed containers? _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

4. HANDLING AND STORAGE OF MATERIALS:
   a. Are materials properly stored and stacked? _____
   b. Are passageways clear? _____
   c. Shelves in stockrooms in good repair and properly anchored _____
   d. Stacks on firm footing, not too high _____
   e. Are employees lifting loads correctly? _____
   f. Are materials protected from weather conditions? _____
   g. Flammable liquids not stored in areas used for exits or stairways _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

5. HAND TOOLS:
   a. Proper tool being used for each job _____
   b. Neat storage, safe carrying _____
   c. Inspection and maintenance _____
   d. Electric tools are grounded _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

6. PERSONAL PROTECTIVE EQUIPMENT:
   a. Eye protection _____
   b. Respirators and masks _____

c. Helmets, hoods, head protection _____
d. Gloves, aprons, sleeves _____
e. Hearing protection _____
f. Safety harnesses and lifelines _____
g. Shirts are to be worn _____
h. Back support belts _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

7. HAZARDOUS MATERIALS:
   a. Is a binder containing MSDS for supplies containing hazardous chemicals available to employees before using? _____
   b. Are "Material Safety Data Sheets are Available on Request" signs posted in conspicuous locations? _____
   c. Is the hazardous waste inventory log maintained? _____
   d. Are hazardous waste storage areas inspected weekly? _____
   e. Is the hazardous material dispositioning log maintained? _____
   f. All containers clearly identified _____
   g. Proper storage practices observed _____
   h. Proper storage temperatures and protection _____
   i. Proper type and number of extinguishers nearby _____

Describe Violation – Location – Remedy Taken

_____
_____
_____
_____.

Unsafe acts and/or practices observed

_____
_____
_____
_____

EMERGENCY INFORMATION

(To Be Posted)

FIRE:

Telephone Fire Department: _____

Nearest Alarm Box: _____

Crime:

Telephone Police: _____

Injury/Illness:

Avoid infection of minor injuries; always get medical attention or skilled first aid

Employees who are First Aid and/or CPR Certified

_____ _____

_____ _____

Doctor _____

Office _____ **Phone** _____

Residence _____ **Phone** _____

Hospital _____

Address _____ **Phone** _____

Ambulance _____

Address _____ **Phone** _____

In all cases of Fire, Crime, Accident, or Sickness, promptly notify:

1. Name _____ **Office Phone** _____
Home Phone _____

2. Name _____ **Office Phone** _____
Home Phone _____

Additional Numbers: _____ _____
(Alarm Company., Office Phone, etc.)
_____ _____

Employee Safety

Handbook

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Employee Safety Handbook

At SEI Solutions, LLC, our most valued resources are our employees, our customers, and the communities we serve. We are dedicated to providing a safe and healthful environment for employees and customers, protecting the public, and preserving SEI Solutions, LLC properties and assets. Injuries can be prevented. In order to achieve an accident free workplace, an organized and effective Safety Program must be carried out company wide to make this policy work.

The Safety and Health Program will assist management and employees in controlling hazards which will minimize employee and customer injuries, damage to customer's property and damage to SEI Solutions, LLC property.

All employees will follow this program

Please take the time to study and understand these safety policies and procedures. It is your responsibility (and ours) to make this program work. You are a valued member of the team, and we care about your safety.

Safety and Health Requirements

All employees will comply with the provisions of the OSHA 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 discharged. Grounds for immediate discharge are:

1) Drinking alcohol, and/or drug abuse prior to or during working hours
2) Fighting
3) Theft
4) Willful damage to property
5) Failure to wear eye protection, hearing protection, safety helmets, etc.
6) Not using safety harnesses and lanyards when there is a potential for falling
7) Removing and/or making inoperative safety guards on tools and equipment
8) Removing barriers and/or guardrails and not replacing them
9) Failure to follow recognized industry practices
10) Engaging in dangerous horseplay
11) Failure to notify SEI Solutions, LLC of a hazardous situation

The following safety and accident activities will be adhered to:

1) Report all injuries immediately to your supervisor
2) Notify your supervisor should you become ill while on the job
3) Inform you supervisor if you have a disability or physical handicap
4) Never move an injured or ill person, unless to prevent further injury

Minor safety violations will be documented and a copy of the below form will become part of the employee's personnel record, The employee will be required to have a meeting with the Safety or Operations Department before returning to the workplace:

Safety Hazard Citation

Date: _____

Name of Violator: _____

Location of Violation: _____

Type of Violation: _____

_____

_____

Violator's Signature: _____

Accident and Incident Reporting

It is important that you report all accidents and incidents that result in injury, illness, or damage (however slight), to your supervisor immediately. SEI Solutions, LLC can learn how to prevent them from occurring in the future. It is SEI Solutions, LLC responsibility to investigate each incident, and your responsibility to report them when they occur.

First Aid and Medical Treatment

SEI Solutions, LLC provides a First Aid Kit on the premises. It is there for your use in the treatment of minor scratches, burns, headaches, nausea, etc. Ask your supervisor to show you its location. Let your supervisor know if you need to use the First Aid Kit.

If you have a work related injury or illnesses that requires professional medical assistance notify your supervisor and let him/her know before you receive this assistance. If you fail to notify your supervisor, you will be ineligible for Worker's Compensation, benefits to pay for doctor's bills, and/or lost wages.

FIRST AID PROCEDURES AND INSTRUCTIONS In all cases requiring emergency medical treatment, immediately call, or have a co-worker call, to request emergency medical assistance.

EMERGENCY PHONE NUMBERS

Safety and Health Manager: _____ **Poison Control:** _____

First Aid: _____ **Fire Department:** _____

Ambulance: _____ **Police:** _____

Medical Clinic: _____

Clinic Address: _____

Minor First Aid Treatment

First aid kits are stored in the _____ . If you sustain an injury or are involved in an accident requiring minor first aid treatment:

- Inform your supervisor.
- Administer first aid treatment to the injury or wound.
- If a first aid kit is used, indicate usage on the Liability Report Form.
- Access to a first aid kit is not intended to be a substitute for medical attention.
- Provide details for the completion of the Liability Report Form.

Non-Emergency Medical Treatment

For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If you sustain an injury requiring treatment other than first aid:

- Inform your supervisor.
- Proceed to the posted medical facility. Your supervisor will assist with transportation, if necessary.
- Provide details for the completion of the accident investigation report.

Emergency Medical Treatment

If you sustain a severe injury requiring emergency treatment:

- Call for help and seek assistance from a co-worker.
- Use the emergency telephone numbers and instructions posted next to the telephone in your work area to request assistance and transportation to the local hospital emergency room.
- Provide details for the completion of the accident investigation report.

First Aid Training

Each employee will receive training and instructions from his or her supervisor on our first aid procedures.

WOUNDS:

Minor: Cuts, lacerations, abrasions, or punctures-

- Wash the wound using soap and water; rinse it well.
- Cover the wound using clean dressing.

Major: Large, deep and bleeding

- Stop the bleeding by pressing directly on the wound, using a bandage or cloth.
- Keep pressure on the wound until medical help arrives.
- Water cuts require special treatment due to the potential for infection. Any water cut should be treated by the company occupational health provider as soon as possible.

BROKEN BONES:

- Do not move the victim unless it is absolutely necessary.
- If the victim must be moved, "splint" the injured area. Use a board, cardboard, or rolled newspaper as a splint.

BURNS:Thermal (Heat)Rinse the burned area, without scrubbing it, and immerse it in cold water; do not use ice water.Blot dry the area and cover it using sterile gauze or a clean cloth.

ChemicalFlush the exposed area with cool water immediately for 15 to 20 minutes.

EYE INJURY:

Small particles

Do not rub your eyes.

Use the corner of a soft clean cloth to draw particles out, or hold the eyelids open and flush the eyes continuously with water.

Large or stuck particles

If a particle is stuck in the eye, do not attempt to remove it.

Cover both eyes with bandage.

Chemical

Immediately irrigate the eyes and under the eyelids, with water, for 30 minutes.

NECK AND SPINE INJURY:

If the victim appears to have injured his or her neck or spine, or is unable to move his or her arm or leg, do not attempt to move the victim unless it is absolutely necessary.

HEAT EXHAUSTION:

Loosen the victim's tight clothing.

Give the victim "sips" of cool water.

Make the victim lie down in a cooler place with the feet raised.

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.

Your Safety Responsibilities

You also have some important responsibilities concerning safety. These are:

- The responsibility of reporting all injuries and illnesses to your supervisor, no matter how small immediately.
- The responsibility of always following the safety rules for every task you perform,
- The responsibility of reporting any hazards you see.
- The responsibility of helping your co-workers recognize unsafe actions or conditions they cause.
- The responsibility of asking about the safety rules you are not sure about.

Employee Safety Rules

It is impossible to list or include all safety rules for all the possible tasks you may have to do. But the following 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 booklet, and to ask your supervisor for additional rules when asked 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 by the Operations Department..

GENERAL SAFETY RULES:

- Read and follow the safety notices and other information that is posted.
- Observe and follow all safety instructions, signs, and operation 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.
- Clean up 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 injury potential. Use gloves, safety glasses, back support belts, etc., as necessary.
- Never stand on chairs, furniture, or anything other than an approved ladder or step stool.
- Never use intoxicating beverages or controlled drugs before or during work. Prescription medication should only be used at work with your Doctor's approval.

FIRE SAFETY:

- Report all fire hazards to your supervisor immediately.
- Fire fighting equipment shall be used only for fire fighting purposes.
- Smoking is not permitted at any time in the areas where "No Smoking" signs are posted.

FIRE SAFETY (continued):

- Do not block off access to fire fighting equipment.

- Keep doors, aisles, fire escapes and stairways completely unobstructed at all times.
- In the case of a fire, your first consideration must be the safety of all persons, then attention should be directed to the protection of property.
- Change clothes immediately if they are soaked with oil, gasoline, paint thinner or any other flammable liquid.
- Know how to report a fire and how to turn on a fire alarm.
- Know the location of all fire extinguishers, and how to use them.
- Know the fire exits to be used in an emergency.

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 tools must not be used.
- Do not carry sharp hand tools in clothing.
- 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 to a flat surface.

PROTECTIVE EQUIPMENT:

- Approved eye protection (safety glasses with side shields, goggles, etc.) must be worn at all times when assigned any certain job classifications. It is important to check with your supervisor to assure compliance.
- Moccasins and shoes with open toes or high heels are not permitted.

- 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, ear plugs, etc.

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.
- 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.
- Smoking is permitted only in designated areas. Use ashtrays for disposing of butts. Do not throw butts on the floor.

SMOKING POLICY:

Smoking is strictly prohibited within all company work areas, customer sites and work locations, company vehicles, public spaces including conference rooms, private offices, reception areas, restrooms, stairwells, hallways, workstations, and any other enclosed areas. This policy applies to all employees, clients, contractors, and visitors. No additional breaks beyond those allowed under the Company's break policy may be taken for the purpose of using tobacco products. Employees may smoke in outdoor designated smoking areas, not closer to 8' from any door or service entrance and during approved breaks only.

All employees shall follow customer and site-specific smoking policies. Specific sites may have more stringent policies due to fire or health related concerns. In all cases, this policy shall be the minimum requirements. If, at any time, employees are unsure of this policy or a site-specific policy, you must contact a Supervisor and verify the policy before using tobacco products.

SUPERVISION:

Physical inspections will be conducted by company managers, including Safety, Project, and the Operations departments. Any violations showing the overall lack of commitment to company safety goals shall be under the same level of disciplinary actions as when an employee commits a safety violation. This includes disciplinary action up to and including termination.

RETURN TO DUTY:

Modified work will be offered, wherever possible, to employees who are unable to return to their regular duties following a workplace injury or illness. The benefits of offering modified duty include, but are not limited to, reduced Workers Compensation costs, improved employee retention, enhanced employee morale, reduction in lost time days, and a strengthening of the company's relationship with its employees. Modified work should be meaningful to the employee and the company, and consistent with work restrictions outlined by the treatment provider.

A list of jobs available to be performed for employees on modified duty should be maintained. All jobs should be assessed to determine which jobs can be performed by persons working under specific restrictions. It is recommended that a Physical Demands Analysis (PDA) be prepared for each of these jobs to ensure workers are placed accordingly.

The Company offers modified work consistent with the medical restrictions listed by the health care provider. Workers must ensure that changes in the scope of the modified work must adhere to the medical restrictions. Modified work is temporary and is managed with a goal to return the individual to full time work as soon as deemed medically fit.

Supervisors must be made aware of the restrictions to ensure the modified work meets the physician's orders.

OSHA Inspection

Purpose:

To establish the policy for all managers to follow if an OSHA Compliance inspection will be conducted.

Overview:

The Occupational Safety and Health Administration (OSHA) is authorized to conduct workplace inspections to determine whether employees are complying with standards issued by the agency for safe and healthful workplaces. Many States have their own occupational safety and health programs, and regularly inspect workplaces. Inspections are usually conducted without advance notice and can be conducted for one or more of the following reasons:

- Imminent Danger Situations – Any condition where there is reasonable danger that a situation exists that can be expected to immediately cause death or serious harm.
- Catastrophes and Fatal Accidents – Investigation of fatalities and accidents resulting in the hospitalization of 3 or more employees. Such catastrophes must be reported to OSHA within 8 hours.
- Employee Complaints
- Programmed Inspections – Based on injury rates, previous citation history, and employee exposure to toxic substances or random computerized selection.

This policy details the phases of an OSHA compliance inspection, the response and attitude of management to an inspection and steps to insure completion of the appropriate follow-up corrective action.

Policy:

SEI Solutions, LLC policy is to demonstrate "**good faith**" effort to comply with all OSHA standards and any health and safety issues raised in an OSHA compliance inspection.

Management is responsible for implementing this policy and correcting all health and safety deficiencies revealed during compliance inspections. The Safety and Health Manager will provide technical assistance and coordination of corrective action, as required.

Admitting an OSHA Compliance Officer:

If an OSHA compliance inspector requests to conduct an inspection, the senior management member is to ask to see the officer's credentials. An OSHA inspector carries either U.S. or the state's Department of Labor credentials bearing their photograph and a serial number. In every case, verify the authenticity of the compliance inspector's identification by calling the nearest OSHA office.

Note: DO NOT REFUSE THE COMPLIANCE OFFICER ADMITTANCE.

The senior management member is to contact the Safety and Health Manager immediately.

If SEI Solutions, LLC requires a Search Warrant, inform the OSHA compliance officer before the opening conference begins. SEI Solutions, LLC rights to challenge a warrant may be lost if it permits the inspection to proceed.

OSHA Facts:

An OSHA Inspection is divided into three parts:

1. The Opening Conference
2. The Walk Around Inspection
3. The Closing Conference

There are no time limits specifying how long an inspector may remain on the premises.

Violations are considered to be "alleged violations" until they become a final order of the Occupational Safety and Health Review Commission.

1. SEI Solutions, LLC may contest (appeal), in writing any part of the citation within 15 working days after it has received it.
2. The citation must be posted in the work place for three days following its receipt or until the condition creating the alleged violation is corrected.
3. Management will ask for clarification about any point(s) an inspector raises that they don't understand.
4. Management and employees will not admit to violating any safety standard.

If SEI Solutions, LLC contests (appeals) an alleged violation, copies of the appeal will be posted at the work site.

Opening Conference:

Before inspecting the premises, the OSHA compliance officer will conduct an opening conference at which they will explain:

- The reason for the inspection (for example. employee or individual complaint)
- Purpose of the visit
- Scope of the inspection
- OSHA Standards that apply

The below are listings of all OSHA Standards

OSHA Standards

- 1904, Recording and Reporting Occupational Injuries and Illnesses
    - 1904 Table of Contents/Authority for 1904
    - 1904.1, Purpose and scope.
    - 1904.2, Log and summary of occupational injuries and illnesses.
    - 1904.3, Period covered.
    - 1904.4, Supplementary record.
    - 1904.5, Annual summary.
    - 1904.6, Retention of records.
    - 1904.7, Access to records.
    - 1904.8, Reporting of fatality or multiple hospitalization incidents.
    - 1904.9, Falsification, or failure to keep records or reports.
    - 1904.10, Recordkeeping under approved State plans.
    - 1904.11, Change of ownership.
    - 1904.12, Definitions.
    - 1904.13, Petitions for record keeping exceptions.
    - 1904.14, Employees not in fixed establishments.
    - 1904.15, Small employers.
    - 1904.16, Establishments classified in Standard Industrial Classification Codes (SIC) 52-89, (except 52-54, 70, 75, 76, 79 and 80).
    - 1904.17, Annual OSHA Injury and Illness Survey of Ten or More Employers.
    - 1904.20, Description of statistical program.
    - 1904.21, Duties of employers.
    - 1904.22, Effect of State plans.
    - 1904.30, OMB control numbers under the Paperwork Reduction Act.

- **Other OSHA Standards with Recordkeeping Requirements**
    - 1910.95, Occupational noise exposure
    - 1910.120, Hazardous waste operations and emergency response
    - 1910.440, Recordkeeping requirements

- 1910.1000, Toxic & Hazardous Substances
    - 1910.1001, Asbestos
    - 1910.1018, Inorganic arsenic
    - 1910.1025, Lead
    - 1910.1027, Cadmium
    - 1910.1028, Benzene
    - 1910.1029, Coke oven emissions
    - 1910.1030, Bloodborne pathogens
    - 1910.1043, Cotton dust
    - 1910.1044, 1,2-dibromo-3-chloropropane
    - 1910.1045, Acrylonitrile
    - 1910.1047, Ethylene oxide
    - 1910.1048, Formaldehyde
    - 1910.1050, Methylenedianiline
    - 1910.1051, 1.3-Butadiene
    - 1910.1052, Methylene Chloride
    - 1910.1450, Occupational exposure to hazardous chemicals in laboratories
- 1913.10, Rules of agency practice and procedure concerning OSHA access to employee medical records
- 1915.7, Competent person
- 1915.1001, Asbestos
- 1919.11, Recordkeeping and related procedures concerning records in custody of accredited persons
- 1919.12, Recordkeeping and related procedures concerning records in custody of the vessel.
- 1925.3, Records
- 1926.60, Methylenedianiline
- 1926.62, Lead
- 1926.65, Hazardous waste operations and emergency response
- 1926.800, Underground Construction
- 1926.1091, Recordkeeping requirements
- 1926.1101, Asbestos
- 1926.1127, Cadmium
- 1960, Federal employees
    - 1960.66, Purpose, scope and general provisions
    - 1960.67, Log of occupational injuries and illnesses
    - 1960.68, Supplementary record of occupational injuries and illnesses
    - 1960.70, Reporting of serious accidents
    - 1960.71, Locations and utilization of records and reports
    - 1960.72, Access to records by Secretary
    - 1960.73, Retention of records
    - 1960.74, Agency annual reports

- **Preambles to OSHA Standards**
    - Reporting of Fatality or Multiple Hospitalization Incidents.

- **OSHA Directives**

- CPL 2.80, Handling of Cases To Be Proposed for Violation-By-Violation Penalties, (1990, October 21), 15 pages. Includes procedures for record keeping violations.
- CPL 2.91, Enhanced Verification of Records, (1990, May 13), 6 pages.
- CPL 2-2.46, 29 CFR 1913.10(b)(6), Authorization and Procedures for Reviewing Medical Records, (1989, January 5), 5 pages.
- CPL 2-2.33, 29 CFR 1913.10, Rules of Agency Practice and Procedure Concerning OSHA Access to Employee Medical Records - Procedures Governing Enforcement Activities, (1982, February 8), 12 pages.
- CPL 2-2.32, 29 CFR 1913.10(b)(6), Authorization of Review of Specific Medical Information, (1981, January 19), 5 pages.
- CPL 2-2.30, 29 CFR 1913.10(b)(6), Authorization of Review of Medical Opinions, (1980, November 14), 2 pages.
- CPL 2.113, Fatality Inspection Procedures, (1996, April 1), 5 pages.

- **Review Commission Decisions**
- 81-2135, (1985, April 17), 5 pages. Failure to make records available during an inspection.
- 82-630, (1991, February 15), 9 pages. Making medical records available when a Workers Compensation claim is pending.
- 82-1016, (1987, March 18), 7 pages. Privacy of OSHA 200 and related records.
- 89-2614, (1993, February 3), 8 pages. Recording of elevated blood lead levels on the OSHA 200.
- 90-552, (1992, February 21), 2 pages. OSHA 200 must be maintained at each location.
- 89-433, (1993, April 27), 9 pages.
- 90-2179, (1993, April 1), 3 pages. Assessing separate penalties for multiple errors on the OSHA 200
- 87-0922, (1993, February 5), 25 pages.
- 88-237, (1994, May 23), 6 pages.
- 91-0110, (1996, January 19), 6 pages.

Standard Interpretations and Compliance Letters

There are several hundred Standard Interpretations and Compliance Letters relating directly to the topic of Recordkeeping. Please refer to the Search Page on the “http://www.OSHA.gov” web site. From here you can access these documents either by the specific regulation, or by conducting a search. You can also contact OSHA at one of their regional offices. They will provide you with forms and answers to any questions you may have. Don’t hesitate to use them as a valuable resource.

Senior Management must arrange for the following to attend the opening conference:

- The President of SEI Solutions, LLC
- Other Personnel, as directed

Management must request copies of all applicable safety and health standards as well as a copy of any employee complaint.

The Walk Around Inspection:

After the opening conference, the OSHA compliance officer will go through the facility to inspect for safety and health hazards. At a minimum, the OSHA compliance officer will likely ask for documentation of the following:

- Compliance with the hazard communication standard.
- Compliance with the lockout/ tagout standard.
- Record keeping for employee training
- The employee written safety and health management program

When senior management members and other SEI Solutions, LLC employees accompany an OSHA compliance officer on an inspection, they should be respectful while firmly standing up for SEI Solutions, LLC rights and viewpoints. The conduct of SEI Solutions, LLC personnel shall be in accordance with the following guidelines:

- Do not physically interfere with the OSHA compliance officer when they are making the inspection
- Do not give false or misleading information.
- Accompany the OSHA compliance officer at all times during the inspection.
- Answers to an OSHA compliance officer's questions are to be responsive to the question asked. Do not offer any information beyond the scope of the question. Avoid making any statement that could be construed as an admission of a violation of any recognized health standard.
- Do not discuss with the OSHA compliance officer any previous safety inspections.

The conduct of SEI Solutions, LLC personnel shall be in accordance with the following guidelines (continued):

- If the OSHA compliance officer wants to take photographs, senior management must request copies of the photographs. Senior management will also take photographs of the area from the same and different angle.

- Watch and take notes regarding all activities of the OSHA compliance officer. Notes should be detailed and should include such pertinent information as to the name(s) of the OSHA compliance officer(s), time of arrival, activities of OSHA compliance officer, amount of time spent at each location, comments about violations and potential citations, who was interviewed, what was said, etc.

- Immediately correct minor but apparent safety problems in order to help establish SEI Solutions, LLC "**good faith"** effort to comply with all OSHA health and safety standards.

- The OSHA compliance officer cannot and will not act in a consultative capacity. If they see or if SEI Solutions, LLC personnel points out a violation, the OSHA compliance officer must issue a citation.

Closing Conference:

After the walk around inspection, a closing conference is held with the OSHA compliance officer, senior management, and any employee representative. The OSHA compliance officer will discuss all unsafe and unhealthy situations observed and will identify all applicable sections of the standards which may have been violated. Management will insure that all violations are understood. When appropriate, Management will produce records to show compliance efforts and fully explain any difficulties that will be encountered in the correction of safety hazards. Management and employees will not admit violation or indicate how long it will take to correct a potential violation.

Post Inspection Activities:

Time limits to correct violations generally range from 5 to 30 days, unless an extension is requested. Time limits will be given in person at the closing conference or mailed within 30 days in a written report of the inspection findings. Follow-up action will be documented in writing, by senior management, listing specific action steps, the individual accountable, and the target date for completion. Management is responsible for completing all corrective action.

OSHA inspection reports, SEI Solutions, LLC response, and all correspondence to and from OSHA will be retained permanently by the Safety and Health Manager.

OSHA Recordkeeping and Posting Requirements

Purpose:

To establish the policy and procedures regarding SEI Solutions, LLC requirements for compliance with OSHA record keeping and posting guidelines for occupational injuries and illnesses.

Policy:

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

OSHA requires that employers maintain a record of work-related fatalities, injuries, illnesses 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 must be logged within 7 days of receiving information that an injury occurred. At the end of each year, OSHA requires the summary section of the OSHA Form Log 300A to be posted at each business establishment in a place visible to employees, no later than February 1 and remain in place until April 30. SEI Solutions, LLC will comply with this requirement. The President is responsible for maintaining the information on the log in a current status and distributing the signed OSHA 300A Form.

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 300, 300A, and 301, retain for 5 years following the year to which they relate

Tool Box Talks/Work Group Safety Meetings Policy

Purpose:

The purpose of Tool Box Talks/Work Group Safety Meetings is to provide a method for the dissemination of information to all employees regarding safety and health issues.

Regular Tool Box Talks/Work Group Safety Meetings demonstrate the Company's concern for the lives and well being of its employees. Tool Box Talks/Work Group Safety Meetings help build a cooperative climate by providing employees with the opportunity to contribute ideas, and to make suggestions that may improve quality, productivity, morale, and safety.

Safety education is required of all employees *at all levels* within the organization. The Company will have a formalized safety training program to prevent accidents and to train employees to do their job safely. Scheduled, Tool Box Talks/Work Group Safety Meetings, will be conducted every Monday morning at 8:00 am. and at times deemed necessary by the Safety and Health Manager or supervisory personnel

Responsibilities:

The Company President will provide the direction and motivation to ensure that all managers conduct regular Tool Box Talks/Work Group Safety Meetings.

Managers and Supervisory Personnel that conduct safety discussions will maintain a log of what was discussed and who attended the meeting. This information shall be turned over to the Safety and Health Manager on a weekly basis.

The Safety and Health Manager shall be a resource for safety and health discussion topics, and shall keep all documentation of all training at a central location.

Employees are required to attend all Tool Box Talks/Work Group Safety Meetings. In the event an employee misses a Tool Box Talk/Work Group Safety Meeting, the employee shall be given individual instruction by their supervisor concerning what was discussed/covered. The supervisor shall document this "training session" and will provide the Safety and Health Manager with this documentation.

Procedure:

The Tool Box Talk/Work Group Safety Meeting is a method used by this Company to develop the employees' safety awareness.

Conducting Tool Box Talks/Work Group Safety Meetings

For greatest effectiveness, cover subjects that most interest the employees. These topics might include accidents, inspection results, the safety program, or a work procedure.

These weekly meetings should last no longer than 15-30 minutes. Ideally, the meeting would include time for active participation by employees; at the least, there should be a question and answer session.

Schedule meetings at the beginning of new operations to ensure that all of the employees are familiar with safe job procedures and the requirements of the upcoming work. These meetings save a lot of time in the long run.

Tool Box Talks/Work Group Safety Meetings may be either motivational or instructional. The motivational meeting creates awareness and aims at worker self protection. The instructional meeting covers a particular job task or procedure.

The supervisor is the key management communicator for work groups, because he or she is most familiar with the individual workers and their work requirements.

Emergency Action Plan

Purpose:

To establish the policy and procedures regarding management's and employee's response to various emergency situations. Examples of an emergency are fire, tornado, earthquake, and bomb threat.

Overview:

The procedures cover the following topics:

1. **Fire Reporting and Response**
2. **Evacuation**
3. **Tornado Preparation and Emergency**
4. **Bomb Threat**
5. **First Aid**
6. **Hazardous Material Spill**
7. **Earthquake**
8. **Robbery**

Policy:

SEI Solutions, LLC has developed plans that address emergency situations that may arise in SEI Solutions, LLC locations and which may threaten human health and safety, and damages SEI Solutions, LLC assets. Management is responsible for implementing the Emergency Action Plans. These Emergency Action Plans will meet the following objectives:

1. Provide a means of notifying employees, customers and local authorities of an emergency situation.
2. Provide for a safe and orderly method of evacuation of employees and customers from SEI Solutions, LLC premises.
3. Account for all employees who occupied SEI Solutions, LLC premises at the time of evacuation, should one occur.

Emergency Action Plans will (continued):

4. Provide emergency first aid treatment or summon emergency medical assistance for injured individuals.
5. Provide training and needed information to those employees responsible for taking action in the event of an emergency.

Signs as required by ordinance, regulation, or law will identify emergency exits. Employees are required to be familiar with the location(s) of alarm pull stations and emergency exits.

Training on Emergency Action Plans will take place during new employee orientation, when changes occur in the action plans, and periodically as coordinated by the Safety and Health Manager.

Smoking is never allowed anywhere on SEI Solutions, LLC premises during an emergency

If hazardous materials are involved, disposal must be done in compliance with federal, state, and local environmental laws.

Procedure:

I. Fire Reporting and Procedure:

If a fire alarm or alert is sounded or a fire is reported by an employee, regardless of the reason for the alarm or the severity of the fire, the following action must be taken immediately:

Senior Management

1. Immediately notifies the Fire Department by dialing 911 (where applicable) or the local fire emergency number.
2. Gives SEI Solutions, LLC name, address, and area where the fire is located.
3. Assigns an employee to wait for the fire department outside SEI Solutions, LLC and direct the department to the fire's location.
4. Announces evacuation instructions over the public address system. "Ladies and Gentlemen. SEI Solutions, LLC is being temporarily closed. We request that you leave by the nearest exit immediately. Thank you."

I. Fire Reporting and Procedure (continued):

Senior Management

5. Once outside SEI Solutions, LLC, takes a head count of employees to insure all were safely evacuated. Double checks that all individuals are out of SEI Solutions, LLC premises.

   Note: When one or more employees are unaccounted for, employees are not to re-enter the building to conduct a search. Notify the ranking fire or other emergency response official on the scene and their approximate location.

6. Immediately after the fire, notify the President of SEI Solutions, LLC and all other management individuals. Coordinate any salvage and repair operations.

Employee

7. If trained in the use of fire extinguishers, may attempt to suppress a small fire, until relieved by the Fire Department or until it becomes apparent that the fire cannot be controlled by fire extinguishers.

   Note: Employees should never attempt to control a fire, which endangers their health. They must immediately evacuate the area when it becomes apparent that the fire cannot be controlled or when conditions become more hazardous.

II. Evacuation:

Senior Management

1. Telephones the local emergency agency (for example, fire, police, hazardous materials team, etc.).
2. Makes the following announcement on the public address system, “Ladies and Gentlemen. SEI Solutions, LLC is being temporarily closed. Please leave by the nearest exit immediately. Thank you.” Make this announcement twice, and repeats it every minute or more frequently if needed.
3. Checks all areas of their respective departments, restrooms, and public areas to verify that employees and individuals are evacuated.

Evacuation (continued):

Senior Management

4. Secures all cash, checks, and charge documents in the safe if time permits.

5. Designates a safe area outside SEI Solutions, LLC as a gathering point for all employees. Takes a head count of employees to insure all were safely evacuated.

Note: Employees are not to re-enter the building. Management will notify the ranking fire or other emergency response official on the scene of a potentially trapped person and their approximate whereabouts.

6. Dismisses all non-essential employees.

7. Telephones the President of SEI Solutions, LLC and all other management personnel.

II. Tornado Preparation and Emergency:

Prior to any tornado emergency, Management will designate safe shelter areas within the building for employees and individuals. There are some general guidelines that may be used to aid in the selection of such spaces. When selecting a safe shelter, consider:

- The lowest floor, preferably a basement
- Interior spaces- rooms with no walls on the exterior
- Areas supported by secure, rigid structural frame members
- Short roof spans

SEI Solutions, LLC safe shelter area is located _in the Basement_____. It will be stocked with a first aid kit or medical supplies and several flashlights.

Tornado Watch Procedures

Senior Management

1. A Tornado Watch means that conditions are right for severe thunderstorms and possible tornadoes to develop. When notified of a tornado watch in the area, Senior Management will tune the radio to the National Weather Service channel to stay current on the storm progress.

2. Checks to insure that all safe shelter areas are unlocked and accessible.

Tornado Watch Procedures (continued)

Senior Management

3. Checks to be sure that medical supplies and flashlights are stored in the safe shelter area.

4. If time permits, “X” the windows with tape or secure

plywood to the outside of windows.

Tornado Warning Procedures

Senior Management

1. A Tornado Warning means a tornado has been seen or detected by radar. Senior Management will inform all employees and individuals to take cover in shelter areas immediately.

2. Makes the following announcement on the P.A. System: " Ladies and Gentlemen. The National Weather Service has issued a Tornado Warning for this area. Due to this warning, SEI Solutions, LLC is being temporarily closed**. Please do not leave the building.** We request that you proceed to the shelter area(s) located in the Basement.
3. Assigns someone to shut off the main gas and electrical system.

4. Afterwards, coordinates first aid assistance to individuals.

III. Bomb Threat:

When someone calls and says there is a bomb in the building, the following steps will be performed:

Employee
(Receiving Threat)

1. Keeps the caller on the line as long as possible. Asks them to repeat the message. Tries to write down every word spoken by the caller.

2. Asks the caller where the bomb is located and when it will go off.

IV. Bomb Threat (continued):

Employee

3. Tells the caller that the building is occupied and detonation of a bomb could result in the death and injury to innocent people.

4. Pays particular attention to background noises, such as music playing, engine noises, etc.

5. Listens to the voice, male, female, voice quality, accent,

and speech impediments.

6. When the caller hangs up, **do not hang up the phone!** Sometimes, phones can be traced back to the source. Immediately notify management and describe the threat.

Senior Management

7. Calls the local Police or Fire Department to report the Incident. Follows all recommendations and instructions provided by either department.

8. If the Police or Fire Department declines to give instructions to evacuate the building, search the premises (if time permits) for any suspicious looking device or package. If one is found, follow the Evacuation Plan. **Do not touch any suspicious device or package.**

IV. First Aid:

If an employee / individual is injured, the initial responsibility of management is to provide the needed first aid or arrange for emergency medical response or professional medical care.

Senior Management

1. Treats the injured individual using the supplies from SEI Solutions, LLC first aid kit.

2. In the event an employee is seriously injured and requires professional medical care, drive the employee to a medical provider. If any individual is not mobile or has a life threatening injury or illness, arrange for emergency care and transportation (call 911).

V. Hazardous Material Spill:

Management will respond to incidental releases of hazardous substances when the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate area or by maintenance personnel. If a large spill or fire occurs that is not controllable, Management will contact the appropriate local authorities, such as the Fire Department.

VI. Earthquake:

All employees must be aware of the potential for earthquakes and the resulting damage to buildings and facilities.

A. <u>During an Earthquake:</u>

Employee

1. If indoors, stay indoors; if outdoors, stay outdoors. In earthquakes, most injuries occur as people are entering or leaving buildings.

    1.a. If indoors:

        1) Take cover beneath a desk, table, bench or in doorways, halls or against an interior wall.

        2) Stay away from glass windows and glass doors, and away from containers having hazardous material stored.

    1.b. If outdoors:

        1) Move away from buildings and all structures, and all overhead electrical wires.

        2) If operating a vehicle, stop as soon as possible, but stay inside the vehicle.

B. <u>After an Earthquake:</u>

Senior Management

1. Coordinates first aid efforts.

2. Turns on the radio to get emergency information from local authorities.

B. <u>After an Earthquake (continued):</u>

Senior Management

3. Check natural gas lines for leaks. If a leak is detected, shuts down the system, and notifies the local gas service company.

4. Shuts off the electrical current at the main breaker box if power has been interrupted.

5. Directs employees and individuals to a safe assembly area outside the building.

6. Takes a head count to insure all employees were safely evacuated.

7. Does not permit individuals to enter the building again until cleared by authorities.

8. Assigns duties to clean up damage and resume business as soon as possible.

VII. Robbery:

In the event a robbery occurs, the main objective is to reduce the risk of injury to employees and individuals and to get the robber out of the building as soon as possible.

Employee

1. Be attentive and calm. Listen to the robber and do exactly what he/she asks you to do.
2. Do give up money as demanded.
3. Remain alert. Try to remember details of the robber's appearance, clothing, speech, etc.
4. If possible, watch the robber's method and direction of escape.
5. Expect foul/strong language. Expect to lie on the floor.
6. Do not make any sudden movements.

VII. Robbery (continued):

Employee

7. Don't overreact. Do not grab for the weapon or call for help.
8. Do not argue.
9. After the robbery, write everything down.

Senior Management

10. Call the Police
11. Call the President of SEI Solutions, LLC
12. Have all witnesses write everything they can recall.

Workplace Violence Policy

PREVENTING ACTS OF AGGRESSION, THREATENING BEHAVIOR, AND VIOLENCE IN THE WORKPLACE

Background:

An average of 20 workers are murdered each week in the United States. The majority of these murders are robbery-related crimes. In addition, an estimated 1 million workers are assaulted annually in U.S. workplaces. Most of these assaults occur in service settings such as hospitals, nursing homes, and social service agencies. Factors that place workers at risk for violence in the workplace include interacting with the public, exchanging money, delivering services or goods, working late at night or during early morning hours, working alone, guarding valuables or property, and dealing with violent people or volatile situations.

The Company recognizes workplace violence as a serious occupational problem. In a June 1996 report, the National Institute for Occupational Safety and Health (NIOSH) published data that revealed homicide has become the second leading overall cause of occupational injury and death, exceeded only by motor-vehicle-related deaths. This report also identified homicide as the leading cause of occupational injury and death for female workers. The Northwestern National Life notes the seriousness of workplace violence in their 1993 report, which states that of every four full-time workers, one is harassed, threatened, or attacked on the job each year. Many incidents can be avoided by employees who are able to recognize early warning signs of potential violence, know when and how to report concerns, and know how to implement the steps to defuse situations before they become violent.

Purpose and Scope:

The purpose of this policy is to provide a safe workplace free from aggressive, threatening, or violent acts through the development and implementation of an effective program that provides a safe workplace. The provisions of this Policy apply to all work sites owned or controlled by the Company and at which work is performed for the Company.

Policy:

It is the policy of the Company to provide a safe workplace for its employees. To this end, all elements of the Company are expected to implement a program to prevent and respond to violence in the workplace.

For purposes of this policy, violence is defined as the deliberate and wrongful violation, damage, or abuse of other persons, self, or property and includes threats of violence. Acts of violence and threats thereof include, but may not be limited to:

- verbal (such as threats, harassment, abuse, and intimidation),
- non-verbal (such as gestures and intimidation),
- physical (such as hitting, pushing, shoving, kicking, touching, and assault), and
- other (such as arson, sabotage, vandalism, and stalking).

It is important that all threats be taken seriously. The threat should not be ignored in the hope that it will resolve itself or out of fear of triggering an outburst from the person who has lodged the threat. If someone poses a danger to himself or others, appropriate authorities should be notified and action should be taken.

It is Company Policy to notify the police if any employee is threatened by anyone.

In developing this program, all sites shall consider the following:

1) A site-specific workplace violence policy and plan that includes written objectives and requirements for all organizational elements and incorporates the overall company policy in identifying and addressing threatening workplace behavior.

2) A review and approval of each plan by the cognizant manager. Specific protocols to be considered in the approval of such plans include:

a) Establishment of crisis assessment and response teams to include all interested stakeholders;

b) Maintenance of information on incidents of violence for review and analysis;

c) Establishment of a procedure for employees to confidentially report threatening situations and other relevant information to management

3) An awareness program for workplace violence prevention which should include:

a) Initial awareness and response orientation and instruction for management and supervisors;

b) Initial awareness orientation and information for workers, including new employee orientation as necessary;

c) Refresher awareness training on an as needed basis for all employees.

4) Written communication from each site to the responsible office of all incidents of violence and subsequent outcomes as the incidents occur.

5) Written communication from each organizational element to human resources of all incidents of violence involving employees and subsequent outcomes.

6) A written quarterly report from each site of all workplace violence incidents and outcomes submitted to the responsible office with a copy of this report forwarded to the occupational health department.

The cognizant manager should include information on workplace violence incidents and outcomes involving the workforce in this submittal.

Responsibilities:

The President will provide specific guidance for implementation of this program.

Supervisors will develop implementation plans incorporating the program requirements for prevention of, and response to, workplace violence of this program for employees

Implementation:

All departmental elements will modify their responsibilities, organizations, management processes, and missions as needed to ensure implementation of this policy.

POSSIBLE RISK FACTORS AND PREVENTIVE MEASURES

Risk Factors

Researchers have suggested a number of factors that may increase the risk of violence, injury and homicide in the workplace. The following are examples of these factors:

- Exchange of money with the public
- Working alone or in small numbers
- Working late night or early morning hours
- Working in high-crime areas
- Guarding valuable property or possessions
- Working in community settings (e.g., taxicab drivers and police)

Preventive Measures

Immediate preventive measures are needed to reduce the large number of occupational violence and homicides each year. The preventive measures presented here may provide some protection to workers until research studies can be conducted to evaluate their effectiveness.

A number of environmental and behavioral measures have been proposed for reducing occupational violence and homicides in high-risk establishments and occupations. These measures include the following:

- Make high-risk areas visible to more people.
- Install good external lighting.
- Use drop safes to minimize cash on hand.
- Carry small amounts of cash.
- Post signs stating that limited cash is on hand.
- Install silent alarms.
- Install surveillance cameras.
- Increase the number of staff on duty.
- Provide training in conflict resolution and nonviolent response.
- Avoid resistance during a robbery.
- Provide bullet-proof barriers or enclosures.
- Have police check on workers routinely.
- Close establishments during high-risk hours (late at night and early in the morning).

Conclusions:

Occupational violence and homicide is a serious public health problem, but many employers and workers may be unaware of the risk. No current OSHA regulations apply specifically to occupational violence or homicide, but a great need exists for worker protection from intentional injury in the workplace.

High-risk workplaces include taxicab establishments, liquor stores, gas stations, detective/protective services, justice/public order establishments, grocery stores, jewelry stores, hotels/motels, and eating/drinking places. High-risk occupations are taxicab drivers/chauffeurs, law enforcement officers (police officers/sheriffs), hotel clerks, gas station workers, security guards, stock handlers/baggers, store owners/managers, and bartenders. Employers in these high-risk establishments and occupations need to be aware of the risk for homicide and take steps to ensure a safe workplace.

RECOMMENDATIONS

NIOSH recommends that the following steps be taken to prevent occupational injuries and homicides. The Company will take these steps:

- Evaluate the factors or situations in the workplace that may place workers at risk, and
- Carefully consider intervention efforts that might minimize/remove risk.

1.11
Incident Investigation, Reporting and Auditing

Introduction:

The Company Incident Reporting System is designed to:

1. Reduce and eliminate hazards and incidents, with or without injury.
2. Track and analyze employee injuries and illnesses, property and vehicle damage, as well as serious events or near misses which might have resulted in personal injury, illness, or property and vehicle damage
3. Initiate the worker's compensation process, if necessary
4. Meet regulatory reporting requirements

All incidents (accidents resulting in injury or causing illness to Company employees) and events (near-miss accidents) shall be reported in order to:

- Establish a written record of factors which cause injuries and illnesses and occurrences (near-misses) which might have resulted in injury or illness but did not, as well as property and vehicle damage.
- Maintain a capability to promptly investigate incidents and events in order to initiate and support corrective and/or preventive action.
- Provide statistical information for use in analyzing all phases of incidents and events Involving Company personnel.
- Provide the means for complying with the reporting requirements for occupational injuries and illnesses outlined in Section 19 of the Occupational Safety and Health Act of 1970.

Applicability and Scope:

The Incident Reporting System requirements apply to all incidents involving Company personnel arising out of or in the course of employment which results in (or might have resulted in) personal injury, illness, and/or property and vehicle damage.

Incidents (Occupational Injuries and Illnesses)

Injuries and illnesses that require reporting include those injuries and illnesses occurring on the job which result in any of the following: lost work time, restrictions in performing job duties, requirement for first aid or outside medical attention, permanent physical bodily damages, or death. Examples of reportable injuries and illnesses include, but are not limited to, heat exhaustion, strained back muscles, contusions, lacerations, loss of consciousness, profuse bleeding, etc.

Other incidents requiring reporting include those incidents occurring on or off the job which result in any of the following: damage to a company vehicle, damage to public/private property by company equipment, fire/explosion, or chemical/product releases. ALL motor vehicle accidents SHALL have police report attached. Examples of reportable incidents include: denting the fender of a company vehicle, spilling material from vac truck, accident caused by private party resulting in damage to company vehicle, etc.

Injuries and illnesses that qualify as “non-reportable” include small paper cuts, common colds, and small bruises not resulting in work restrictions or requiring first aid or medical attention. Examples of other non-reportable incidents include, but are not limited to, bumping elbow on doorframe, experiencing flu-like symptoms, hitting ankle on pipe causing bruise, etc;

Suspected Covid-19 cases and/or symptoms such as Cough, shortness of breath, fever, sore throat, headache, loss of taste or smell, etc. shall be reported to supervisor to eliminate transmission of Covid throughout crews. Follow Company covid protocols.

Events (Near Misses)

Other incidents which, strictly by chance, do not result in actual or observable injury, illness, death, or property damage are required to be reported. The information obtained from such reporting can be extremely useful in identifying and mitigating problems before they result in actual personal or property damage.

Examples of near miss incidents required to be reported include but not limited to; ice buildup on walking surface, dropping vac hose from elevated platform, leaving entrance to confined space open, etc.

Responsibilities

All Company personnel have a responsibility to report all occupational injuries and illnesses, and other incidents or events immediately under the Company Incident Reporting System. The supervisor on the job performs the initial investigation and that the Health and Safety Manager determines if further investigation is needed and performs the more in-depth investigation when required.

Safety Director

The Safety Director has the overall responsibility for implementing the Incident Reporting System, including review of incident/event reports, recommendation of corrective and/or preventive actions, and maintaining record keeping required by federal regulations. Distribution of Safety Contacts sharing corrective actions, change of policies, or other recommendations to minimize repeating incidents.
The Safety Director or designee shall conduct the incident investigation for all occupational illnesses and injuries and complete an Incident Investigation Report.

Account Managers

Account Managers are primarily responsible for ensuring that all accident /incident reports are turned into the Safety Director in a timely manner. Account Managers are responsible for completing all incident reports if an incident involves a supervisor. Account Managers shall notify the Safety Director immediately of all incidents. Account Managers shall follow all customer reporting policies in the event the incident occurs on customer property.

Supervisors

Supervisors are primarily responsible for ensuring that the company accident/incident reports and any accident investigation forms are completed and returned to the Safety Director within 24 hours of the incident occurance. Incident reports should be prepared and include an incident report form with a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, investigation member names, narrative of the event, findings and recommendations. Photographs, employee witness statements, drawings, etc. should be included.

Company Personnel

All Company employees must be familiar with the procedures for reporting occupational injuries and illnesses and hazardous conditions or situations in which employees may be potentially exposed. All Company personnel have the responsibility to initiate the incident reporting sequence by informing their supervisors immediately of an actual or potential injury or illness as soon as possible after an incident has occurred. Employees directly involved or witness to an incident, an Employee Statement SHALL be completed and turned in to their immediate supervisor by the end of shift.

Incident Reporting Procedures and Practices

This section describes the specific procedures that shall be followed by Company personnel to effectively report occupational injuries and illnesses and other incidents or events.

Incidents (Injuries and Illnesses)

Serious injury or illness posing a life-threatening situation shall be reported immediately to the local emergency response medical services (Call 911) or contact the site emergency number.

Injuries and illnesses shall be reported by the injured employee to his or her supervisor in person or by phone as soon after any life-threatening situation has been addressed. If the injured employee is unable to report immediately, then the incident should be reported as soon as possible.

Upon notification of an occupational injury or illness, the supervisor should notify the Health and Safety Manager, who will then prepare the necessary record keeping forms.

Required incidents must be verbally reported to applicable regulatory agency(s) within 8 hours of their discovery. Incidents must also be reported to the client as soon as possible, or in a timely manner (within 24 hours of incident).

Events

Incidents not involving injury or illness, but resulting in property damage, must also be reported to the Health and Safety Manager within 24 hours of the incident.
In cases of a fire or explosion that cannot be controlled by one person, vehicular accident resulting in injury or more than $500 worth of damage, or a chemical release requiring a building evacuation, the involved party must immediately report the incident to the onsite plant emergency number or the emergency response services in the area (911 – police, fire, etc.)
All near miss incidents are also required to be reported on the Incident Report Form within 48 hours of occurrence. In place of indicating the result of the incident (i.e., actual personal or property damage), the reporting person shall indicate the avoided injury or damage.

Events, hazardous working conditions or situations, and incidents involving contractor personnel must be reported to Health and Safety Manager immediately.

Recordkeeping

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. The Safety and Health Manager will maintain the required OSHA 300 Log and Summary OSHA 300A. The attached Supervisor Accident Report supplements the OSHA 301 to the OSHA 300 Log.

Incident Investigations

The Safety and Health Manager will review each reported incident and event to:

1. Determine if further investigation is required and then perform the investigation

2. Make recommendations for corrective and/or preventative actions necessary to reduce or eliminate hazardous conditions and monitor the status of the abatement actions.
3. All incidents should be investigated, and the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method.
4. Supervisors and safety officers will be trained in their roles and responsibilities for incident response and incident investigation techniques annually. Training requirements relative to incident investigation and reporting (Awareness, First Responder, Investigation, and training frequency) will be identified in the training program.
5. Proper equipment will be provided to conduct investigations. Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, PPE, marking devices such as flags, equipment manuals, etc.
6. Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions. Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment. Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed.

Company Health and Safety Manual

Each new employee shall be given copies of sections of the Company Health and Safety Manual (that pertain to employee safety) upon starting employment with the Company.

Training

To ensure that Company personnel are cognizant of the Company Incident Reporting System requirements and are aware of their own and other's responsibilities, a series of informational and instructional training opportunities exist.

Personnel new to the Company are required to attend New Employee Orientation training which will inform them on Company organizational structure, resources, and procedures. This orientation will ensure that new personnel are familiar with this Manual and its contents, and who the responsible persons in their organizations are.

Review and Audit

The effectiveness of a program can only be accomplished if the program is implemented. Therefore, periodic reviews and audits shall be conducted to confirm that all employees have obtained a copy of this Manual and are familiar with the incident reporting requirements. Furthermore, review and auditing may include an inspection of report submissions and filing systems.

Implementation

Implementation of the Company Incident Reporting System will be achieved by educating employees and maintaining a culture of hazard awareness and elimination. The following mechanisms shall be utilized to promote and execute the program.

- Distribution of the Company Health and Safety Manual
- Training for supervisors
- Program review and audit

SMOKING POLICY

Smoking is strictly prohibited within all company work areas, customer sites and work locations, company vehicles, public spaces including conference rooms, private offices, reception areas, restrooms, stairwells, hallways, workstations, and any other enclosed areas. This policy applies to all employees, clients, contractors, and visitors. No additional breaks beyond those allowed under the Company's break policy may be taken for the purpose of using tobacco products. Employees may smoke in outdoor designated smoking areas, not closer to 8' from any door or service entrance and during approved breaks only.

All employees shall follow customer and site-specific smoking policies. Specific sites may have more stringent policies due to fire or health related concerns. In all cases, this policy shall be the minimum requirements. If, at any time, employees are unsure of this policy or a site-specific policy, you must contact a Supervisor and verify the policy before using tobacco products.

Violations of this policy may result in disciplinary action up to and including discharge.

Behavioral Safety Program

Introduction:

The Behavioral Safety Program is designed to:

1. Reduce and eliminate hazards and incidents, with or without injury caused by employee behaviors.
2. Observations provide direct, measurable information on employees' work practices, indentifying both safe and unsafe behaviors.

Applicability and Scope:

Training will be provided to safety personnel, supervision and labor on the job auditing process and how the audits integrate into the behavioral safety program.

This training will include:

(1) Program objectives and incident metrics reviewed

(2) How to conduct the observation

(3) How to complete the observation form

(4) What do the behaviors mean

(5) Feedback training and role play (mentoring and coaching)

(6) Employees should be aware they may be observed at any time

Review and Audit

Upon completion of an observation, the observer is expected to have a discussion with the observed to get feedback.

The observer will:

(1) Review the observation with observed employee

(2) Start with a positive comments

(3) Reinforce safe behaviors observed first

(4) Describe and discuss unsafe behaviors observed

(5) Solicit from observed employee explanation of his/her unsafe behavior with open-ended questions

(6) Re-emphasize no consequence to observed employee

Implementation

The effectiveness of a program can only be accomplished if the program is implemented. Therefore, periodic reviews and audits shall be conducted. Individual departments, as well as the company as a whole, will compare these measurements and track these results by an acceptable method so that numerical and statistical comparisons can be made over time Once trend analysis is complete, appropriate action plans must be developed to address unsafe behaviors.

Action planning will include:

(1) Evaluate unsafe behaviors from trend analysis and prioritize

(2) Develop action plan for unsafe behaviors based on comments and feedback from data sheets

(3) Designate responsible parties and timeframes within the action plan

(4) Define who is responsible for action planning

(5) Ensure management support

1.14
Stop Work Authority

1. Purpose

1.1 This program establishes the Stop Work Authority (SWA) of all team members and contractors to suspend individual tasks or group operations when the control of Health, Safety or Environmental (HSE) risk is not clearly recognized or understood and/or equipment or situation is compromised.

2. Applicability

This "stop work" program applies to all SEI Solutions projects and operations.

3. Policy

It is the policy of SEI Solutions, LLC. that:

3.1 All team members have the authority and responsibility to stop any task or operation where concerns or questions regarding the control of HSE exist.

3.2 No work will resume until all stop work issues and concerns have been effectively addressed.

3.3 Any form of retribution or intimidation directed at any team member or company for exercising their authority as outlined in this program will not be tolerated.

3.4 As with any policy, accountability for non-compliance will follow established company procedures or contract requirements.

4. Responsibilities

4.1 Administration shall be responsible for:

4.1.1 Administration shall resolve issues resulting from a team member's "stop work" concerns and ensure no actions are taken as retribution against team member(s) who raise safety concerns to stop an activity they believe is unsafe.

4.1.2 Administration shall work to establish and support a culture where the Stop Work Authority is exercised freely.

4.2 Safety Department shall be responsible for:

4.2.1 monitoring compliance with the requirements of this program, the maintenance of associated documents, processes, training materials, identification of trends, and sharing of lessons learned.

4.3 Project Managers and Field Supervisors shall be responsible for:

4.3.1 accepting and support all "stop work" intervention from team members.

4.4 All employees shall:

4.4.1 have a responsibility and are authorized to "stop work" on any activity or situation they believe danger, or a risk is present to them or a coworker without fear of retribution from management. The "stop work" may include discussion with other employees, managers, supervisors or the Safety Department to resolve work related issues, address potential unsafe conditions, and/or clarify work instructions, etc.

4.4.2 Employees are required to immediately stop working upon notification of a "Stop Work" situation and wait until an "all clear to resume" has been issued by supervision.

5. Stop Work Authority Procedure:

5.1 Any employee who identifies a potentially unsafe condition or act which could result in an undesirable event, a "stop work" intervention shall be immediately initiated for the individual(s) and/or equipment potentially at risk. All potential unsafe condition or acts shall be documented on a Job Safety Analysis. The JSA shall be completed daily at the beginning of every job to identify all potential unsafe condition or issues.

5.2 The employee who identified the "stop work" incident will notify all affected personnel and their Supervisor of the stop work issue.

5.3 All personnel shall discuss and gain agreement on the "stop work" issue.

5.4 Resolve any issues that have resulted in the "stop work". The issue resolution or corrective action must be discussed with all team members, including the Project Manager, and be in place before return to work.

5.5 If team members cannot provide a resolution to the "stop work", then work shall be suspended until a resolution can be achieved. The Safety Department shall be notified of the situation and a Safety Department representative shall make the final determination on the corrective action and provide the go-ahead to continue.

5.6 All corrective actions on job "stop work" incidence when finalized shall be documented. The team member(s) shall use SEI's Incident Reporting form for this process.

6. Reporting

6.1 All "stop work" concerns shall be documented as a "near miss" report. Supervisors shall use SEI's Incident Reporting policy form for reporting purposes. The report shall be reviewed by the Operations Manager and the SEI Safety Manager in order to:

6.1.1 Identify the "stop work" incident.

6.1.2 Notify and report to affected team members and Management.

6.1.3 Provide corrective action to job stoppage.

6.1.4 Resume work after issues has been resolved and cleared to proceed.

6.1.5 Facilitate lessons learned with team members.

6.2 The Safety Department will publish incident details regarding the "stop work" action to all SEI employees outlining the issue, corrective action, and lessons learned.

7. Follow-up

7.1 Management will review all "stop work" reports within one week in order to identify any additional investigation or follow-up required. The report will be used as part of "lessons learned". The Safety Manager will provide the root cause analysis for the "stop work" action and identify any potential opportunities for improvement, encourage employee's participation, and share lessons learned.

8. Training

8.1 Training regarding this Stop Work Authority Policy will be conducted as part of all new hire orientations. Additionally, this policy as well as other company safety policies shall be reviewed as part of SEI's monthly tailgates safety meetings. All training shall be documented.

Coronavirus (COVID-19) Company Policy

PURPOSE

1.1 SEI Solutions strives to provide a safe and healthy workplace for all employees. This COVID-19 Pandemic policy outlines our overall response to a pandemic COVID-19 outbreak and our emergency preparedness and business continuity plan. It outlines specific steps SEI Solutions shall take to maintain essential operations and continue providing essential services to our customers. In addition, it provides guidance on how we intend to respond to specific operational and human resource issues in the event of a pandemic.

1.2 This coronavirus (COVID-19) company policy is susceptible to change with the introduction of additional governmental guidelines.

SCOPE

2.1 This coronavirus (COVID-19) policy applies to all employees.

DEFINITIONS

3.1 Coronavirus (COVID-19)

According to the federal Centers for Disease Control, the Occupational Safety and Health Administration (OSHA), and other organizations that monitor public health threats Coronavirus Disease 2019 (COVID-19) is a respiratory disease caused by the SARS-Cov-2 virus. It has spread from China to many other countries around the world, including the United States. Depending on the severity of COVID-19's international impacts, outbreak conditions-including those rising to the level of a pandemic- can affect all aspects of daily life, including travel, trade, tourism, food supplies, and financial markets. COVID-19 poses the most serious global threats to public health and our economy. It conceivably can cost billions of dollars in productivity losses resulting from absenteeism, payouts of sick leave or workers' compensation, and lost sales; disrupt transportation and communication services on which we all depend; and impede delivery of necessary goods and services. Inability to predict when such a disease might strike and with what severity makes it incumbent on SEI Solutions to consider how our business might be affected and to articulate what needs to be done to respond to an outbreak.

3.2 Close Contact

For COVID-19, a close contact is anyone who was within 6 feet of an infected person for a total of 15 minutes or more, provided care at home, or had direct physical contact with someone who is sick or tested positive for COVID-19.

3.3 Isolation

Keeping someone who is sick or tested positive for COVID-19 without symptoms away from others, even in their own home.

3.4 Quarantine

Quarantine refers to the practice of separating individuals who have had close contact with someone with COVID-19 to determine whether they develop symptoms or test positive for the virus.

3.5 Social Distance

Keeping a safe space between yourself and other people who are not from your household. To practice social or physical distancing, stay at least 6 feet (about 2 arms' length) from other people who are not from your household in both indoor and outdoor spaces.

PROCEDURE

4.1 Infection-Control Measures-SEI Solutions takes several steps to minimize exposure and prevent the spread of infection in the workplace. SEI Solutions mandates the following recommendations set by the Center of Disease Control (CDC).

- Avoid close contact-maintain when possible minimum 6' distance between other workers.
- Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- All service vehicles will have available disinfecting spray. All Supervisors will be required to ensure to disinfect commonly touched areas of each service truck before and after each shift.
- Disinfecting hand sanitizer will be available in all common areas of SEI Solutions field offices and Corporate Headquarters.

- All field employees shall use cloth face covering if social distance of 6 feet is not feasible. Cloth coverings can be commercial, or home made but should be made with minimum 2 layers of cloth and not restrict breathing. Cloth face covering should fit snugly and secured with ties or ear loops. Refer to https://www.cdc.gov/coronavirus/2019-ncov/index.html for additional information. If cloth face coverings are not available employees shall use any of the following, disposable procedure mask, N95 respirator or issued 3M half face respirator with P100 filters.
- All field employees performing cleaning processes like disinfecting or sanitizing shall wear minimum personal protective equipment including but not limited to: Hard hat, safety glasses, Tyvek suit, safety shoes/boots, half-face respirator and rubber gloves.
- All employees and visitors who may enter any SEI Solutions facility (i.e. Main office, Warehouse, Maintenance Area, Safety and Training Trailers) shall wear at a minimum, cloth face covering. Cloth coverings can be commercial, or home made but should be made with minimum 2 layers of cloth and not restrict breathing. Cloth face covering should fit snugly and secured with ties or ear loops. Refer to https://www.cdc.gov/coronavirus/2019-ncov/index.html for additional information. If cloth face coverings are not available employees shall use any of the following, disposable procedure mask, N95 respirator or issued 3M half face respirator with P100 filters.
- Employees who have had close contact with someone who tested positive for Covid-19, shall quarantine immediately. Employees who have had close contact but show no symptoms may return to work after 10 days without a Covid test. Employees who have had close contact but show no symptoms may return to work after 7 days after receiving a negative Covid test result (test must occur on day 5 or later). Employees shall closely monitor for symptoms for 14 days after exposure. Employees shall notify Human Resources if symptoms occur during quarantine and 14 days after exposure.
- Employees who test positive for COVID-19 (using a viral test, not an antibody test) shall be excluded from work and remain in home isolation if they do not need to be hospitalized. Employees with COVID-19 who have symptoms may discontinue isolation under the following conditions:
    - At least 10 days* have passed since symptom onset and 24 hours have passed since resolution of fever without the use of fever-reducing medications **and**
    - Other symptoms have improved.
- Employees who test positive for COVID-19 but never develop symptoms, isolation and other precautions can be discontinued 10 days after the date of their first positive RT-PCR test for SARS-CoV-2 RNA.

4.2 Sick Leave Arrangements

- If you have cold symptoms, such as cough/sneezing/fever, or feel poorly, request sick leave or work from home if possible.

4.3 Work/Stay Home Request

- If you are feeling ill but able to work, you can request to work from home if applicable to your job function.
- If you have recently returned from areas with a high number of COVID-19 cases (based on CDC announcements), we'll ask you to stay home for 14 calendar days, and return to work only if you are fully asymptomatic. You will also be asked not to come into physical contact with any colleagues during this time.
- If you have been in close contact with someone infected by COVID-19, with a high probability of being infected yourself, notify Human Resources and quarantine immediately. You will also be asked not to come into physical contact with any colleagues during this time.

4.4 Traveling/Commuting Measures

- In-person meetings shall be conducted virtually or over the phone if possible. If a meeting must be conducted in person there shall be no more than four people attending the meeting at any given time. All employees shall maintain proper social distancing of a minimum 6' of separation at all times.
- While riding in company vehicles when proper social distancing cannot be avoided, all field employees are required to wear at a minimum, cloth face covering. Cloth coverings can be commercial, or home made but should be made with several layers of cloth and not restrict breathing. Cloth face covering should fit snugly and secured with ties or ear loops. Refer to https://www.cdc.gov/coronavirus/2019-ncov/index.html for additional information. If cloth face coverings are not available employees shall use any of the following, disposable procedure mask, N95 respirator or issued 3M half face respirator with P100 filters.
- If you are planning to travel voluntarily to a high-risk country with increased COVID-19 cases, we'll ask you to work from home or stay home for 14 calendar days. You will also be asked not to come into physical contact with any colleagues during this time.

4.5 General Hygiene

- Wash your hands after using the toilet, before eating, and if you cough/sneeze into your hands (follow the 20-second hand-washing rule).
- Cough/sneeze into your sleeve, preferably into your elbow. If you use a tissue, discard it properly and clean/sanitize your hands immediately.
- Open the windows regularly to promote increased ventilation.

- Avoid touching your face, particularly eyes, nose, and mouth with your hands to prevent the spread of infection.

4.6 Workplace Cleaning & Disinfecting

- Main offices and common areas shall be cleaned and disinfected at the end of each business day.
- Common areas shall be disinfected with a disinfectant on EPA List N: Disinfectants for Coronavirus (COVID-19)external icon using an Electrostatic Spraying device.
- If an Electrostatic Spraying device is not available, disinfecting will be completed manually.

RESPONSIBILITES

5.1 Supervisors- Supervisors shall ensure the appropriate type of personal protective equipment is available for the assigned task and shall ensure the personal protective equipment is properly used by the affected employees. Supervisors are responsible for the following:

- Ensure all employees who wear respiratory protective devices are thoroughly trained in their use.
- Provide employees with personal protective equipment that is appropriate for the task and ensure the use of such devices.
- Identify potentially hazardous conditions and implement corrective actions to eliminate or minimize the risk of infection or injury. If there is an unusual situation or there is uncertainty about how to manage a situation, immediately remove personnel from the hazard and contact the Safety and Health Manager.

5.2 Employee

- Use personal protective equipment as required by company policy and recommended by the Center of Disease Control (CDC) protocols.
- Stay home if sick, except to get medical care.
- Practice social distancing by keeping at least 6 feet away from fellow employees or co-workers, customers, and visitors when possible.
- Employees should inform their supervisor if they or their colleagues develop symptoms at work.
- Wash hands often with soap and water for at least 20 seconds, especially after blowing noses, coughing, or sneezing.
- Where possible, avoid direct physical contact such as shaking hands with people.
- Store and maintain personal protective equipment properly to prevent damage and inspect prior to each use.
- Report any malfunction of personal protective equipment to the immediate supervisor.

5.3 Others

- Personnel, such as employees, inspectors, and visitors, who must enter an area where the use of Coronavirus (COVID-19) personal protective equipment is required, shall be provided with and use the appropriate equipment.

5.4 Safety and Health Manager

- Develop and implement all aspects of the Coronavirus (COVID-19) program.
- Develop training programs and standard operating procedures to fulfill the requirements of existing CDC Guidelines, OSHA regulations and amendments associated with the Coronavirus (COVID-19) program.
- Periodically inspect and replace, if needed, all personal protective devices stored for emergency use

Return to Work Policy

Modified work will be offered, wherever possible, to employees who are unable to return to their regular duties following a workplace injury or illness. The benefits of offering modified duty include, but are not limited to, reduced Workers Compensation costs, improved employee retention, enhanced employee morale, reduction in lost time days, and a strengthening of the company's relationship with its employees. Modified work should be meaningful to the employee and the company, and consistent with work restrictions outlined by the treatment provider.

A list of jobs available to be performed for employees on modified duty is maintained by the human resources department. All jobs should are assessed to determine which can be performed by persons working under specific restrictions. A Physical Demands Analysis (PDA) will be prepared for each of these jobs to ensure workers are placed accordingly.

Employees are informed by communicating the company policy via a safety meeting or toolbox talk, reviewing the policy as part of the new employee orientation, and/or posting the policy in a conspicuous location.

Local health care providers are advised that SEI Solutions, LLCprovides modified work to injured employees, whenever practicable. This is accomplished by proactively making arrangements with clinics who specialize in Occupational Health, and recommending injured employees seek treatment there. If this is not practicable, a standard letter will be drafted that outlines the company's modified work opportunities. Injured employees should take this letter with them when they visit their health care provider.

SEI Solutions, LLCoffers modified work consistent with the medical restrictions listed by the health care provider. Workers must ensure that changes in the scope of the modified work must adhere to the medical restrictions. Modified work is temporary and is managed with a goal to return the individual to full time work as soon as deemed medically fit.
Supervisors must be made aware of the restrictions to ensure the modified work meets the physician's orders.

Medical records are kept on a need-to-know basis. The records are kept in a locked file. These file are currently maintained in a locked file only accessible by the human resources manager.

SEI Solutions, LLCmaintains written records of incident details. SEI Solutions, LLCuses this information to recall information about the circumstances of the incident. Incident investigation records are used as teaching tools and maintained to provide a basis for continuous improvement. Records are be kept of communications with the injured employee regarding modified work. Workers Compensation and medical records, where applicable, are also be maintained.

1.17
Company Policy for Disciplinary Procedures & Methods

Enforcement of Safety Policies

The compliance of all employees with SEI Solutions. Safety and Health Program is mandatory and shall be considered a condition of employment. All safety rules, procedures, and plans in effect are to be followed as specified in the safety program. Employees found to be in violation of Company safety policy may be subject to penalty.

The Operations Manager is the supervisor for disciplinary actions and any employee in a position of management or supervisory capacity may initiate disciplinary action against any employee found to be in violation of Company policy. Not following verbal or written safety procedures, guidelines, rules, horse play, failure to wear selected PPE, abuse of selected PPE, and etc. constitutes a safety violation.

The following outlines the disciplinary measures which will be taken against employees found to be in violation:

Periodic safety inspections of the workplace and equipment will be undertaken to ensure that all personnel, including supervisory positions, are demonstrating the required commitment to safety. A general neglect of safe work procedures, practices, and requirements in the workplace, or neglect of equipment safety, will be viewed as a lack of supervisory enforcement of safety policy and the appropriate supervisor/management personnel will be subject to the same disciplinary procedures described below.

The following programs will be utilized to ensure employee compliance with the safety program and all safety rules:

- Training programs
- Retraining
- Optional safety incentive programs
- Disciplinary action

Training Programs

The importance of safe work practices and the consequences of failing to abide by safety rules will be covered in the New Employee Safety Orientation and at Tailgate/Toolbox Safety Training. This will help ensure that all employees understand and abide by The Company's safety policies.

Retraining

Employees that are observed performing unsafe acts or not following proper procedures or rules will be retrained by their foreman or supervisor. A Safety Contact Report may be completed by the supervisor to document the training. If multiple employees are involved, additional safety meetings will be held.

Safety Incentive Programs

Although strict adherence to safety policies and procedures is required of all employees, The Company may choose to periodically provide recognition of safety-conscious employees and jobsites without accidents through a safety incentive program.

Disciplinary Action

The failure of an employee to adhere to safety policies and procedures established by Niles Industrial Services, LLC. can have a serious impact on everyone concerned. An unsafe act can threaten not only the health and well being of the employee committing the unsafe act but can also affect the safety of his/her coworkers and/or customers. Accordingly, any employee who violates any of The Company's safety policies will be subject to disciplinary action.

When a —Safety Violation Notice ‖ is issued, appropriate supervisory personnel will meet with employee(s) to discuss the infraction and inform individual(s) of the rule or procedure that was violated and the corrective action to be taken.

Note: Failure to promptly report any on-the-job accident or injury, on the same day as occurrence, is considered a serious violation of The Company ‘s Code of Safe Practices. Any employee who fails to immediately report a work-related accident or injury, no matter how minor shall be subject to disciplinary action.
Employees will be disciplined for infractions of safety rules and unsafe work practices that are observed, not just those that result in an injury. Often, when an injury occurs, the accident investigation will reveal that the injury was caused because the employee violated an established safety rule and/or safe work practice(s).

In any disciplinary action, the foreman should be cautious that discipline is given to the employee for safety violations, and not simply because the employee was injured on the job or filed a Workers ‘Compensation claim.
Violations of safety rules and the Code of Safe Practices are to be considered equal to violations

of other Company policy. Discipline for safety violations will be administered in a manner that is consistent with The Company ‘s system of progressive discipline. If, after training, violations occur, disciplinary action will be taken as follows:

1 ***Oral warning.*** Documented, including date and facts on the —Corrective Actions Form. Add any pertinent witness statements. Restate the policy and correct practice(s).

2 ***Written warning.*** Retrain as to correct procedure/practice.

3 ***Written warning with (1 Day) suspension.***

4 ***Written warning with (2 Day) suspension.***

4 ***Termination.***

As in all disciplinary actions, each situation is to be carefully evaluated and investigated. The step taken in the disciplinary process will depend on the severity of the violation, employee history, and regard to safety. Managers and superintendents should consult with the office if there is any question about whether disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations. Union employees are entitled to the grievance process specified by their contract.

Note: Consistency in the enforcement of safety rules shall be always exercised.

No***tes:***

1.18 Subcontractor Policy

SCOPE

This section applies to all SEI Solutions affiliates, all contractors working on a subcontract to SEI Solutions Construction, and all affiliates utilizing subcontract labor.

POLICY

Each subcontractor will be expected to be aware of and comply with all local, state, and federal safety standards and regulations.

Each subcontractor will be furnished a non-controlled copy of the SEI Solutions Safety & Health Program and will be required to comply with those portions of the manual which deal with job site safety and health. At the conclusion of your services, a meeting will be held with our job foreman to evaluate your company's safety performance.

GENERAL

In many states, and under federal OSHA, SEI Solutions is responsible for the safety violations of its subcontractors. Under OSHA's Multi-Employer Worksite Policy more than one employer may be citable for a hazardous condition that violates an OSHA standard. Upon inspection OSHA will determine whether the employer is a creating, exposing, correcting, or controlling employer.

- The Creating Employer
  - The employer that caused a hazardous condition that violates an OSHA standard.
- The Exposing Employer
  - An employer whose own employees are exposed to the hazard.
- The Correcting Employer
  - An employer who is engaged in a common undertaking, on the same worksite, as the exposing employer and is responsible for correcting a hazard. This usually occurs where an employer is given the responsibility of installing and/or maintaining safety/health equipment or devices.
- The Controlling Employer
  - An employer who has general supervisory authority over the worksite, including the power to correct safety and health violations itself or require others to correct them.

> Control can be established by contract or, in the absence of explicit contractual provisions, by the exercise of control in practice.

In addition, an injury to a subcontractor's employee could potentially expose SEI Solutions to a possible civil lawsuit. Therefore, coordination between the incident prevention activities of the subcontractor and those of SEI Solutions is a must if the objective of incident frequency reduction and lowered costs are to be achieved.

Prior to the commencement of any work on a SEI Solutions project, the subcontractor will ensure that all his personnel, both supervisory and hourly, receive a safety and health orientation from either SEI Solutions superintendent or another SEI Solutions supervisor on the project.

SUBCONTRACTOR RESPONSIBILITIES

General

The subcontractor will provide to the SEI Solutions superintendent on the project, his job supervisor's telephone number so that he may be contacted after hours in case of an emergency involving the subcontractors work or his equipment.

The subcontractor will ensure that his safety program follows all the existing safety and health requirements of local, state and federal regulatory agencies. Where applicable, this may include, but not be limited to, hazard communication training, personal protective equipment training, respiratory protection training (including respirator fit testing), required medical examination and clearance, etc.

In addition to compliance with the safety requirements of all applicable regulatory agencies, the subcontractor is also responsible for complying with the SEI Solutions Safety and Health Program.

The subcontractor is responsible for all employees working for him and for all other persons calling on him or doing business with him while on a SEI Solutions job site. As a Subcontractor, notify the SEI Solutions Supervisor if you have any subcontractors on site.

Prequalification Process

Our prequalification process starts by sending out our SEI Solutions Subcontractor Requirements package. This contains a statement written by the Director of Health & Safety outlining the requirements and expectations of the potential subcontractor. It furthers highlights Job Safety and Health rules that must be adhered to while under the direction of SEI Solutions LLC.. Lastly, the Sub is asked to list their OSHA recordkeeping statistics along with their Experience Modification Rate or equivalent as these

numbers are used to assign one of three possible outcomes.

They are:

- Not approved – Any subcontractor that has an EMR greater than 1 along with a three-year average OSHA TCIR rate will not qualify.
- Approved with Supervision- This is a category that has been implemented to further gain knowledge of the subcontractor's safety behavior. This category is used when a variance is needed for category #1 above or if the subcontractor passed the safety statistics listed in category #1 but in lacking in other areas listed on page 5 of our pre-qualification package. If the subcontractor is listed in this category, the SEI Solutions site supervision will automatically assign a employee with greater than 1 year experience to oversee the subcontractor and observe their work practices. This SEI Solutions employee has the authority to stop work as well as recommend the subcontractor be removed from a site.
- Approved- A full approval is given if the subcontractor displays both an EMR and OSHA TCIR below 1 and page 5 is not lacking in any category listed.

The next step in our prequalification process is to communicate with our field employees. A list is sent via email to all SEI Solutions field supervision on a weekly basis.

Our customers are protected from our subcontractor employee and SEI Solutions employees because we list our customer's as additional insured. If our subcontractor employee or our employee sues our customer, our insurance company defends and pays any claim against our customer.

We protect SEI Solutions by requiring the subcontractor to list SEI Solutions and our customer as additional insured. This way if a subcontractor employee sues SEI Solutions or our customer, the subcontractor's insurance company must defend and pay any claim against SEI Solutions or our customer.

SUMMARY OF SUBCONTRACTOR SAFETY RULES

The following summary of some important incident prevention rules and work procedures apply to all SEI Solutions subcontractors while working on SEI Solutions projects:

Medical Facilities

Subcontractors must furnish their own first aid supplies, which are to be in a place where they are immediately available to his personnel. When requested, SEI Solutions will furnish the subcontractor with Emergency Telephone Number information per customer site specifications.

Incident Reporting

Promptly report all incidents and near misses to your SEI Solutions Supervision and fill out all required injury and investigation forms as requested, send a copy of all paperwork to SEI Solutions Safety Director within 24 hours. An incident is: Any injury of illness to an employee, non-employee, or visitor; any damage to any owned or non-owned property or equipment on the site. A near miss is any incident that happened where there was no significant injury, illness, or property damage but there could have been.

Clothing

The subcontractor will be expected to comply with SEI Solutions requirement for the wearing of appropriate construction type clothing by all personnel. The minimum work clothing that is acceptable for all SEI Solutions or SEI Solutions subcontractor employees working on a SEI Solutions jobsite, is long pants, protective footwear meeting ASTM F2413- 05, standard specification for performance requirements for foot protection - Protective Footwear, and a shirt that completely covers the workers shoulders and provides adequate protection against such hazards as material splash, abrasions to the skin, oil or grease spills, and slag from welding or cutting.

Personal Protective Equipment

Approved hard hats & safety glasses shall be worn when on any job site. Hearing protection shall be worn in all areas of noise levels above 90db. Safety goggles, face shields, etc., must be worn whenever the potential for eye injury exists beyond single eye/face protection and the task would warrant extra protection such as water blasting. Appropriate respiratory protection equipment shall be used when conditions warrant. Other suitable protective clothing must be worn when required such as Kevlar lined gloves when using a cutting tool or leather gloves when handling heavy material. All subcontractor employees working at unprotected heights must wear approved safety harness and properly attached safety lines.

Inspections

Subcontractors are required to conduct a daily safety check of each of the areas where their men are working and to report any unsatisfactory conditions to SEI Solutions superintendent. Weekly safety inspections are required on all SEI Solutions job sites and documented. Also, daily safety checks will be conducted either by The SEI Solutions superintendent or an individual whom the SEI Solutions superintendent has assigned to this responsibility. Subcontractors will be required to correct any unsatisfactory safety conditions created because of their operations within a reasonable period of time. If this is not done, violation procedures will apply.

Violation Procedures

When unsafe conditions or practices are observed by SEI Solutions superintendent, the sub- contractor supervisor will be requested to correct them. If no action is taken within a reasonable length of time, a letter outlining the violation will be issued and submitted to the management offices of the subcontractor and SEI Solutionsfor appropriate action.

Safety Meetings

All SEI Solutions craft personnel are required to participate in weekly toolbox talk safety meetings. These are short training sessions held by SEI Solutions Superintendent to comment on one or more job hazards and safe practices to follow for avoiding incidents.

Subcontractors are required to either participate in these meetings or to conduct similar meetings for their personnel. If separate meetings are held, they should be documented in a brief report filed with SEI Solutions superintendent.

Electrical Equipment

Subcontractors are responsible for maintenance of their extension cords. Defective extension cords must be removed from service immediately. Subcontractors are expected to use ground fault circuit interrupters (GFCI) whenever possible and will furnish a copy of their Assured Equipment Grounding Conductor Program to SEI Solutions Superintendent. Prior to working on electrical equipment, the subcontractor must make certain that all electrical circuits in the immediate vicinity of his work are appropriately protected or that they are either locked out or tagged out of service to assure that no one will incidentally energize the circuit. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both in accordance with OSHA's Subpart S Electrical standard.

Fire Protection

Gasoline and other flammable liquids must be kept in approved containers and storage require- ments for quantities and types used must comply with local and federal regulations. "NO SMOK- ING" signs must be posted in areas where flammable liquids are stored. The Subcontractor will be expected to enforce all "NO SMOKING" areas located on the job site. The Subcontractor will be expected to furnish the appropriate number, size, and type of portable fire extinguishers required for the job and to provide the necessary training to his personnel in their use. Fire extinguishers are not to be tampered with or removed from their assigned locations.

Housekeeping

Good housekeeping practices are extremely important, and subcontractors are responsible for housekeeping conditions in their respective work areas. Refuse and scraps should not be allowed to accumulate, particularly when they interfere with workflow or create additional fire hazards. Combustible materials must be placed in appropriate metal containers and not be permitted to accumulate in the work area.

SUBCONTRACTOR EMERGENCY ACTION PLAN

Each subcontractor working on a SEI Solutions job site is required to have a site-specific Emergency Action Plan. The minimum elements of the Emergency Action Plan, which must be in writing and physically located at the job site, must include at least the following:

- The method in which emergencies situations are announced.
- Emergency escape procedures and emergency escape route assignments.
- Procedures to be followed by employees who must remain to operate any critical equipment which has to be shut down before they can evacuate.
- A procedure to account for all employees after emergency evacuation has been completed.
- Who will provide rescue and medical duties as required?
- The method of reporting fires and other emergencies.
- Names and/or job titles, as well as telephone numbers, of persons who can be contacted for additional information about the Emergency Action Plan.

The subcontractor must ensure that his Emergency Action Plan is written in accordance with the requirements OSHA Standards, 29 CFR 1926.24, entitled Fire Protection and Prevention, and 29 CFR 1926.35, entitled Employee Emergency Plans, both of which require that each employer be responsible for the development and maintenance of an effective Emergency Action Plan at the job site. Copies of the subcontractor's Emergency Action Plan must be provided to SEI Solutionsjob site Superintendent and posted where the subcontractor's employees are working at the job site.

SUBCONTRACTOR SITE SECURITY

The subcontractor should take the required security measures to protect his materials, including those furnished to him by SEI Solutions Construction, insomuch as SEI Solutionswill not be re- sponsible for any missing subcontractor materials or tools.

The subcontractor will be responsible for any loss or damage caused by him, his workmen, or his subcontractors to the work or materials, to adjacent property, and to persons.

USE OF THE SEI SOLUTIONS COMPANIES' EQUIPMENT BY THE SUBCONTRACTOR

Subcontractor's will not be authorized to use any SEI Solutions Item of Equipment, including scaffolding, ladders, fall protection harnesses, personal protective equipment, respiratory protection, etc., unless the subcontractor completes an Indemnification Agreement with The SEI Solutions Companies prior to the use of such Equipment.

A sample of an Indemnification Agreement is included within this section.

Access to Employee Exposure and Medical Records

1.0 PURPOSE

1.1 The purpose of this policy is to provide employees and their designated representatives with a process for accessing the employee's exposure and medical records if the employee has been exposed to a toxic substance or harmful physical agent in the workplace.

2.0 RESPONSIBILITIES

2.1 In accordance with OSHA standard 29 CFR 1910.1020, SEI Solutions must maintain exposure and medical records for employees who are exposed to toxic substances or other harmful physical agents while in the work environment, and these records must be available to employees upon request. This policy contains the recordkeeping, notification, and access requirements established by the OSHA standard.

2.2 The policy applies to all personnel who are exposed to hazardous substances in the workplace. It does not apply to medical records pertaining to employee assistance programs, drug and alcohol testing or other medical records that are deemed medically confidential which are maintained apart from the company's overall medical program and its records.

2.3 Other policies contain additional recordkeeping requirements related to exposure to hazardous substances:

- Benzene
- Hazard Communication
- Hearing Conservation
- Lead Management
- Medical Examinations
- Radiation Safety
- Recordkeeping
- Respiratory Protection

3.0 MINIMUM REQUIREMENTS

3.1 Employee medical and exposure records shall be maintained for the duration of the employment **and** 30 years thereafter.

3.2 Exposure records shall include the results of environmental (workplace) monitoring, the results of biological monitoring, and safety data sheets.

3.3 When they are first hired and annually thereafter, employees must be informed of their right to access their individual exposure and medical records.

3.4 The employee is responsible for contacting their supervisor or HR Manager to initiate a request for records.

3.5 Access to records must be provided at no cost to the employee or the employee's designated representative no later than 15 working days after the employee has submitted the request for access.

3.6 Medical records with personal identifiers such as name, address, sex, age, Social Security number, etc. shall have personal information removed before the records are turned over to requesting authorized third party.

4.0 DEFINITIONS

4.1 **Access**—For purposes of this policy, the right and opportunity to examine and copy records.

4.2 **Biological monitoring**—Continuous or repeated measurement of body tissues, cells (hair or fingernails), or fluids (blood or urine) to determine the extent of hazardous material absorption or accumulation. See also Environmental monitoring.

4.3 **Environmental monitoring**—Continuous or repeated measurement of agents in the environment to evaluate environmental exposure and possible damage to living organisms. Tests typically include ambient air samples and surface wipe samples. See also biological monitoring.

4.4 **Exposure record**—Information, results, or records of an employee's exposure to toxic or harmful substances or agents in the workplace. Examples include sampling results, biological monitoring results, inventories of chemicals, and material safety data sheets.

4.5 **Medical record**—For purposes of this policy, the company's record of an employee's health status. The medical record includes, but is not limited to, medical histories (excluding information on substance abuse, behavioral disorders, and other non-occupational records maintained by the employer); results of medical examinations and lab tests; medical opinions, diagnoses, notes, and recommendations; first aid records; treatments and prescriptions; and results of biological and environmental monitoring.

4.6 **Medical surveillance**—A program that regularly tests employees for early detection of overexposure to hazardous chemicals. Medical surveillance is required for employees working with asbestos, benzene, lead, certain carcinogens, and other substances specified in 29 CFR 1910.1001–1910.1052.

4.7 **Safety data sheet (SDS)**—Written information about a hazardous substance that informs employees about its characteristics (physical properties, reactivity, toxicity, health effects, etc.) and the proper procedures for handling, storing, and disposing of it. The information also includes recommended first aid and emergencies procedures in case of an accident involving the substance.

5.0 ROLES AND RESPONSIBILITIES

5.1 Human Resources Manager

(a) Maintains employee medical records.

(b) Provide employees with medical records within 15 days of written request.

5.2 Safety Director

(a) Make available the entire OSHA standard, 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records," to any employee requesting it.

(b) Provide employee exposure records within 15 days of written request, including results of workplace monitoring, results of biological monitoring, and safety data sheets.

5.3 Supervisors

(a) Provide notification, e.g., bulletin board posting, to employees providing information of what records are available under OSHA's Employee Exposure and Medical Records regulation and how to access them.

6.0 RECORDKEEPING

6.1 Employee medical and exposure records shall be maintained for the duration of the employment and 30 years thereafter.

Exception: The 30-year rule does not apply to:
(1) health insurance claims records maintained separately from the employee's medical records.
(2) first aid records of one-time treatment for minor injuries if made on-site by someone who is not a physician and if maintained separately from the employer's medical program; and
(3) records of employees who worked for the company less than one year and who took their records upon termination.

6.2 Exposure records shall include the following:

(a) Results of environmental (workplace) monitoring
(b) Results of biological monitoring
(c) Safety data sheets

7.0 NOTIFICATION

7.1 Employees must be informed of their right to access their individual exposure and medical records when first hired and annually thereafter.

7.2 The notification must include the following information:

7.2.1 The existence, location, and availability of employee records for exposure to toxic substances or harmful physical agents.

7.2.2 The person responsible for maintaining and providing access to records.

7.2.3 The employee's right of access to the records

Note: Notification can be distributed during annual training sessions and safety meetings, in an annual letter to all employees, through bulletin board postings, or other communication methods. (See Appendix I for a sample bulletin board posting.)

7.3 Supervisors are responsible for notifications.

7.4 Safety Coordinators must make available the entire OSHA standard, 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records," to any employee requesting it.

8.0 ACCESS

8.1 The employee is responsible for contacting their supervisor to initiate a request for records.

8.2 Access to records must be provided to the employee or the employee's designated representative no later than 15 working days after the employee has submitted the request.

8.3 Records or copies of records must be provided at no cost to the employee.

9.0 DOCUMENT HISTORY

Title:	Exposure & Medical Records Retention		
Pages:	5	**Effective Date:**	4/24/2023
Preparer:	George Humphrey	**Owner:**	Jason Trinks
		Approver:	Jason Trinks

Revision History			
Date	**Section**	**Brief Description of Changes**	**Approver Initials**
4/24/23	1.19	Exposure & Medical Records Retention Policy in service	JT

Appendix I
Bulletin Board Posting

Notice To All Employees

This workplace, as well as other sites to which you may be assigned in connection with your employment, is subject to Title 29 of the Code of Federal Regulations, Section 1910.1020, "Access to Employee Exposure and Medical Records."

If you are exposed to a toxic substance or a harmful physical agent in the workplace, you (or your designated representative) are entitled to review and copy the following records and related information:

- Exposure records relevant to your actual or potential exposure
- Your medical records
- Analyses concerning your working conditions or workplace
- OSHA's standard (29 CFR 1910.20) regarding access to employee exposure and medical records

Exposure records are to be maintained under the direction of Corporate Safety Department and are available to you upon request. Medical Records are maintained under the direction of Human Resources. If you are interested in reviewing or copying any of these records, contact your supervisor or HR Advisor who will make the necessary arrangements.

First Aid & CPR Program

The Company provides a First Aid Kit on the premises. It is there for employee's use in the treatment of minor scratches, burns, headaches, nausea, etc. All employees shall know the location of the First Aid Kit and shall notify their supervisor if they need to use the First Aid Kit.

If an employee has a work related injury or illnesses that requires professional medical assistance, they shall notify their supervisor and let him/her know before they receive this assistance. If they fail to notify their supervisor, they may be ineligible for Worker's Compensation, benefits to pay for doctor's bills, and/or lost wages.

In the absence of medical assistance within 3-4 minutes of worksite the jobsite Project Supervisor is responsible for rendering First Aid.
All Project Supervisors have a valid certificate in first aid training, and shall be contacted to render first aid, as necessary.

The Safety and Health Manager shall inspect First Aid Kits before the kits are sent out to each job, and on a weekly basis to insure that they are filled and complete

FIRST AID PROCEDURES AND INSTRUCTIONS

In all cases requiring emergency medical treatment, immediately call, or have a co-worker call, to request emergency medical assistance. Depending on the facility were work is being performed this may entail contacting security or dialing 911. This information will be located on the Job Safety Analysis and will be different per location. This information will be reviewed with all employees prior to the start of work and kept on the jobsite for the projects duration.

EMERGENCY PHONE NUMBERS

Safety and Health Manager: _____ **Poison Control:** _____

First Aid: _____ **Fire Department:** _____

Ambulance: _____ **Police:** _____

Medical Clinic: _____

Clinic Address : _____

Minor First Aid Treatment

First aid kits are stored in the service truck. First aid kits shall consist of appropriate items which will be adequate for the environment in which they are used. For construction operations, items shall be stored in a weather proof container with individual sealed packages of each type of item.

Project Supervisors will ensure the availability of adequate first-aid supplies, and periodically reassess the demand for supplies and adjust their inventories. For construction operations, first aid kits shall be checked before being sent out to each job and at least weekly.

If an employee sustains an injury or are involved in an accident requiring minor first aid treatment, they shall:

- Inform their supervisor.
- Administer first aid treatment to the injury or wound.
- If a first aid kit is used, indicate usage on the accident investigation report.
- Access to a first aid kit is not intended to be a substitute for medical attention.
- Provide details for the completion of the accident investigation report.

Non-Emergency Medical Treatment

For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If an employee sustains an injury requiring treatment other than first aid, they shall :

- Inform your supervisor.
- Proceed to the posted medical facility. Your supervisor will assist with transportation, if necessary.
- Provide details for the completion of the accident investigation report.

Emergency Quick Drenching/Flushing Treatment:

Where the eyes or body of any employee may be exposed to injurious corrosive materials, suitable flushing facilities shall be provided within the work area.
The facility emergency showers or portable flushing stations will be used in the event an employee accidentally spills or splashes injurious chemicals or liquids on their clothing or body. Employees shall notify their supervisor if they use the Quick Drenching/Flushing Facility.

Emergency Medical Treatment

If an employee sustains a severe injury requiring emergency treatment:

- Call for help and seek assistance from a co-worker.
- Use the emergency telephone numbers and instructions posted next to the telephone in your work area to request assistance and transportation to the local hospital emergency room.
- Provide details for the completion of the accident investigation report.

First Aid Training

Each employee will receive training and instructions from his or her supervisor on following Company first aid procedures. All Project Supervisors or at least one person on every jobsite will have a valid certificate in first-aid training obtained from the U.S. Bureau of Mines, the American Red Cross, or the equivalent training that can be verified by documentary evidence.

First Aid Procedures

WOUNDS:

Minor: Cuts, lacerations, abrasions, or punctures-

- Wash the wound using soap and water; rinse it well.
- Cover the wound using clean dressing.

Major: Large, deep and bleeding

- Stop the bleeding by pressing directly on the wound, using a bandage or cloth.
- Keep pressure on the wound until medical help arrives.

BROKEN BONES:

- Do not move the victim unless it is absolutely necessary.
- If the victim must be moved, "splint" the injured area. Use a board, cardboard, or rolled newspaper as a splint.

BURNS:

Thermal (Heat)

Rinse the burned area, without scrubbing it, and immerse it in cold water; do not use ice water. Blot dry the area and cover it using sterile gauze or a clean cloth.

Chemical

Flush the exposed area with cool water immediately for 15 to 20 minutes.

EYE INJURY:

Small particles

Do not rub the eyes.

Use the corner of a soft clean cloth to draw particles out, or hold the eyelids open and flush the eyes continuously with water.

Large or stuck particles

If a particle is stuck in the eye, do not attempt to remove it.

Cover both eyes with bandage.

Chemical

Immediately irrigate the eyes and under the eyelids, with water, for 30 minutes.

NECK AND SPINE INJURY:

If the victim appears to have injured his or her neck or spine, or is unable to move his or her arm or leg, do not attempt to move the victim unless it is absolutely necessary.

HEAT EXHAUSTION:

Loosen the victim's tight clothing.
Give the victim "sips" of cool water.
Make the victim lie down in a cooler place with the feet raised.

CPR (CardioPulmonary Resuscitation)

Alternative names: Rescue breathing, chest compressions - for adults; resuscitation, cardiopulmonary - for adults

Definition: CPR is a combination of rescue breathing (which provides oxygen to the victim's lungs) and chest compressions (which keep the victim's heart circulating oxygenated blood).

Considerations: CPR can be lifesaving, but it is best performed by those who have been trained in a CPR course. The procedures described here are not a substitute for CPR training.

Time is very important when dealing with an unconscious who is not breathing. Death can occur in 8 to 10 minutes and brain death begins after 4 to 6 minutes without oxygen.

Causes: Cardiopulmonary arrest is a combination of 2 life-threatening conditions: absence of breathing and no heartbeat.

Symptoms:

- No Breathing
- No pulse
- Unconsciousness

DO NOT:

- DO NOT give chest compressions if there is a heartbeat; doing so may cause the heart to stop beating.
- DO NOT move the victim's head or neck to check for breathing if a spinal injury is suspected.

Call immediately for emergency medical assistance if:

- you are not alone, have one person call the local emergency number while another person begins CPR.
- you are alone, shout for help and administer CPR.

FIRST AID:

1. Check for consciousness. Shake or tap the victim gently. See if the victim moves or makes a noise. Shout, "Are you OK?"

2. If there is no response, shout for help.

3. Position the victim on his or her back on a hard surface, keeping the back in a straight line, supporting the head and neck. Unfasten the victim's clothing if necessary to gain access to the victim's chest.
4. Kneel next to the victim's chin. Tilt the head back and lift the jaw forward to move the tongue away from the windpipe. If a spinal injury suspected, pull the jaw forward without moving the head or neck. Don't let the victim's mouth close.

5. Place your ear close to the victim's mouth and watch for chest movement. For 5 seconds, look, listen, and feel for breathing.

6. If the victim is not breathing, begin rescue breathing. Maintain the head position, close the victim's nostrils by pinching them with your thumb and index finger, and cover the victim's mouth tightly with your mouth. Give 2 slow, full breaths, with a pause in between.

7. If the chest does not rise, reposition the head and give 2 more breaths. If the chest still doesn't rise, the victim's airway is blocked. Follow instructions for chocking

Chocking Symptoms:

- unconscious
- lack of breathing
- inability to move air into the lungs with mouth-to-mouth resuscitation

DO NOT:

- DO NOT try to grasp an object that is lodged in the victim's throat. This might push it farther down the airway. If the object is visible in the mouth, it may be removed.
- DO NOT begin the chest compressions of CPR (if heartbeat has stopped) until the airway is cleared.

FIRST AID:

1. Roll the victim onto their back on a hard surface, keeping their back in a straight line, firmly supporting their head and neck. Expose the victim's chest.

2. Open the victim's mouth with your thumb and index finger, placing your thumb over his tongue and your index finger under his chin. If the object is visible and loose, remove it.

3. Lift the victim's chin while tilting the head back to move the tongue away from the windpipe. If a spinal injuyr is suspected, pull the jaw forward without moving the head or neck. Don't let the mouth close.

4. If the victim is not breathing, begin rescue breathing. Maintain the head position, close the victim's nostrils by pinching them with your thumb and index finger, and cover the victim's mouth tightly with your mouth. Give 2 slow, full breaths, with a pause in between.

5. If the victim's chest does not rise, reposition the head and give 2 more breaths.

6. If the victim's chest still doesn't rise, begin abdominal thrusts, as follows. Kneel at the victim's feet or astride the thighs (or to the side if the victim is obese or pregnant). Place the heel of your hand in the middle of the abdomen just above the navel, well below the tip of their breastbone. (If the victim is obese or pregnant, place the heel of your hand in the middle of the victim's breastbone. Do not place your hand on the ribs or on the tip of the breastbone.) Place your other hand on top of the first hand.

7. Give 6 to 10 quick thrusts compressing the victim's chest about 2 inches, pressing your hands inward and upward. Do not press to either side. Each thrust is a separate attempt to clear the victim's airway by forcing air out through the windpipe.

8. Open the victim's mouth with your thumb and index finger. If the object is visible and loose, remove it. Observe the victim's

breathing. If the infant stops breathing, begin CPR.

9. If the object is not dislodged, give 2 breaths, 6 to 10 abdominal thrusts, and then check for the object. Repeat this sequence until the object is dislodged or help arrives.

8. If the victim's chest does rise, place 2 fingers on the victim's Adam's apple. Slide your fingers into the groove between the Adam's apple and the muscle on the side of their neck to feel for a pulse for 5 to 10 seconds.

9. If the victim has a pulse, give 1 breath every 5 seconds. Check the pulse after every 12 breaths.

10. Be sure the local emergency number has been called. Have someone else make the call if possible. Continue giving breaths and checking the pulse.

11. If the victim has no pulse, begin chest compressions. Maintain the head position and place the heel of your hand 2 finger-widths above the lowest notch of the victim's breastbone (where the lower edge of the ribcage meets in the middle). Place the heel of your other hand directly over the heel of the first hand. Interlock your fingers; don't let them touch the victim's chest. Lock your elbows straight. Lean your shoulders over your hands, and firmly press down about 2 inches into the victim's chest. Repeat the compressions 15 times. Give the compressions in a smooth, rhythmic manner, keeping your hands on the victim's chest. Don't rock back and forth - push straight down. Don't pause between compressions.

12. Give the victim 2 breaths, followed by 15 chest compressions. Repeat this sequence 4 times. Count aloud as you pump in a regular rhythm. You should pump at a rate of about 80 to 100 times a minute. Count 1 and 2 and 3 and 4 and...15 and (breathe, breathe).

13. Recheck the victim's pulse for 5 to 10 seconds.

14. Repeat steps 12 and 13 until the victim's pulse resumes or help arrives. If the pulse resumes, go to step 9.

15. Once pulse and respiration resume role the person onto his side taking care to move the body as a whole unit. This is called the recovery position, but it should not be used if you suspect there might be a neck or spinal injury. Stay by the person until help arrives.

Prevention:

Be prepared and use good judgment.

Hearing Conservation Program

Introduction:

Evidence is well established that worker exposure to noise of sufficient intensity and duration can result in hearing damage. Noise-induced hearing loss rarely results from just one exposure; it can progress unnoticed over a period of years. Initial noise-induced hearing loss occurs at the higher frequencies where the consonant portion of speech is found, making communications difficult.

Engineering controls such as mufflers on heavy equipment exhausts or on air release valves are required where possible. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible.

Noise exposure is often not constant and is difficult to control with either engineering or administrative solutions. Hearing protection is often the only choice available.

Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the Safety and Health Manager. In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 85 dB(A) or lower.

Audiometric testing will be provided by the Company's physician to all employees with exposure to noise levels of 80 dB(A) or greater.

Area noise monitoring will be conducted by the Safety and Health Manager using a sound level meter to determine the need for personnel monitoring or engineering controls. If any work areas register levels of 80 dB(A) or greater, personnel monitoring will be conducted. Personnel monitoring is accomplished by using noise dosimeters which are worn by employees for their full work shift. The cumulative noise dose for the employee is then read at the end of their work shift.

Policy:

It is the policy of the Company to provide employees with a safe and healthful working environment. This is accomplished by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When effective engineering controls are not feasible, or when they are being initiated, administrative controls will be used when and where possible followed by the use of personal protective equipment.

The primary goal of the Company's Hearing Conservation Program is to reduce, and eventually eliminate hearing loss due to workplace noise exposures. The program includes the following elements:

a. Work environments will be surveyed to identify potentially hazardous noise levels and personnel at risk.
b. Environments that contain or equipment that produces potentially hazardous noise should, wherever it is technologically and economically feasible, be modified to reduce the noise level to acceptable levels.
c. Where engineering controls are not feasible, administrative controls and/or the use of hearing protective devices will be employed.
d. Periodic hearing testing will be conducted to monitor the effectiveness of the hearing conservation program. Early detection of temporary threshold shifts will allow further protective action to be taken before permanent hearing loss occurs.
e. Education is vital to the overall success of a hearing conservation program. An understanding by employees of the permanent nature of noise-induced hearing loss, the Company hearing conservation program, and the employee's responsibilities under the program are all essential for program effectiveness.

Responsibilities:

Safety and Health Manager-

The Safety and Health Manager is responsible for developing, implementing, and administering the Company Hearing Conservation Program. Additional responsibilities include:

1. Identification of work areas and equipment within Company facilities where noise levels equal or exceed 80 dBA.
2. Identification, through personnel monitoring, of Company employees whose noise exposure level equals or exceeds an 8-hour TWA (Time-Weighted Average) of 80 dBA. Notification of employee exposure measurements is sent to the Safety and Health Manager to be included in employees' medical files.
3. Annual remonitoring of identified at-risk employees.
4. Resurvey of work areas and equipment where noise levels exceed 80 dBA every 2 years.
5. Training of employees in the need for, proper use and care of hearing protection devices.
6. Identification of noise control measures (including engineering and administrative controls) and recommendations.

The Safety and Health Manager is also responsible for coordinating and scheduling health and safety training courses and seminars. The Safety and Health Manager also maintains

documentation of the training courses presented in accordance with the Safety Program requirements.

Supervisors-

It is the responsibility of Supervisors to ensure that all of their employees exposed to noise levels equal to or greater than 80 dBA have access to appropriate hearing protective devices in the work area. Supervisors are also responsible for enforcing the use of hearing protective devices and engineering and administrative controls in designated noise hazardous areas.

Employees-

Employees are responsible for wearing and maintaining hearing protective devices as instructed. Employees exposed to excessive levels of noise must also participate in annual training programs and the medical surveillance program which includes audiometric testing.

NOISE EVALUATION AND SURVEILLANCE PROCEDURES

Identification of Hazardous Noise Areas-

The Safety and Health Manager will identify work areas within Company facilities where noise levels equal or exceed 80 dBA. Records shall be maintained by the Safety and Health Manager and updated at least every two years to determine if any alteration in noise levels has occurred. Those areas where the noise levels are below 80 dBA will not be routinely monitored. Identification of hazardous noise areas and equipment and any subsequent noise monitoring will be conducted by the Safety and Health Manager.

Signs will be posted at the entrance to any work area where noise levels exceed 80 dBA, requiring anyone entering the area to wear proper hearing protection. Personnel who work in these areas shall have hearing protection supplied to them, shall be instructed in its proper use, and be required to wear this equipment when in these identified areas. It is the responsibility of the area supervisor to ensure that these precautions are maintained.

Equipment which produces noise levels greater than 80 dBA, or 120 dB peak sound pressure levels shall also be appropriately labeled.

Noise Measurements and Exposure Assessments

In order to effectively control noise it is necessary that the noise be accurately measured according to standard procedures and that the measurements be properly evaluated against accepted criteria. All noise monitoring will be conducted in accordance with established standard operating procedures.

The monitoring of employees for noise exposure is made up of two parts, area and personal monitoring. Area measurements are generally obtained first. If noise levels are at or above 80 dBA, personal monitoring using dosimeters is then performed. Sample data sheets will be used to record monitoring data for both area and personal noise monitoring results.

Area Measurements

In an area survey, measurements of environmental noise levels are recorded using a sound level meter to identify work areas where employees' exposures may be above hazardous levels, and where more thorough exposure monitoring may be needed. Area monitoring is conducted using a calibrated sound level meter set to the A scale, slow response. Within the area of interest, several different locations will be measured. Typical measurement locations would include:

- In the hearing zone at the employee's normal work location.
- Next to the noise source(s).
- At the entrance(s) to the work area.
- At other locations within the area where the employee might spend time working.

A rough sketch of the area will be included with the results showing the locations where the noise readings were obtained.

If the noise levels are below 80 dBA on a time-weighted average basis in the area, no further routine monitoring will be required for that area. Should any of the noise measurements equal or exceed 80 dBA, records shall be maintained as to the noise levels recorded, where they were taken, and the source(s) of the noise. These records shall be updated at least once every two years to determine if any changes have occurred that would warrant remonitoring of exposed personnel. If any of the measurements equal or exceed a noise level of 80 dBA, employees who work in or near the high noise area or equipment shall have their noise exposure determined through personnel monitoring using dosimeters.

Personnel Monitoring

Determination of the noise exposure level will be accomplished using calibrated noise dosimeters. Each employee to be monitored will have a dosimeter placed on him/her at the beginning of his/her normal work shift with the microphone placed in the "hearing zone". The dosimeter will be worn for the full duration of the work shift while the employee performs his/her normal work routine. At the end of the work shift, the dosimeter will be removed and information printed out as soon as possible. Background information will be collected from each employee detailing job description, unusual job activities, etc., for the time period sampled.

Those employees whose noise exposure equals or exceeds 80 dBA on an 8-hour TWA (Time-Weighted Average) will be referred to the Safety and Health Manager for inclusion in the Hearing Conservation Medical Surveillance Program.

Remonitoring of Hazardous Noise Areas

All areas where noise levels equal or exceed 80 dBA shall be remonitored at least every two years. Employees who work for extended periods of time (>2 hours) in the high noise areas and where their 8-hour TWA (Time-Weighted Average) equals or exceeds 80 dBA will be monitored every year to determine their personal noise exposure.

Whenever an employee exhibits a standard threshold shift, as determined by the Safety and Health Manager, the employee's work place shall be remonitored to identify and ameliorate the cause.

Remonitoring Due to Changes

Any area with noise levels that equal or exceed 80 dBA shall also be remonitored whenever a change in production process, equipment, or controls increase the noise exposure such that additional employees are exposed to noise levels at or above 80 dBA on a time-weighted average basis. Areas where the noise levels have dropped below 80 dBA due to alterations in equipment, controls or process changes shall be eliminated from the monitoring program.

NOISE CONTROL METHODS

Engineering and Administrative Controls

The primary means of reducing or eliminating personnel exposure to hazardous noise is through the application of engineering controls. Engineering controls are defined as any modification or replacement of equipment, or related physical change at the noise source or along the transmission path that reduces the noise level at the employee's ear. Engineering controls such as mufflers on heavy equipment exhausts or on air release valves are required where possible.

Engineering and Administrative Controls (continued)

Administrative controls are defined as changes in the work schedule or operations which reduce noise exposure. If engineering solutions cannot reduce the noise, administrative controls such as increasing the distance between the noise source and the worker or rotation of jobs between workers in the high noise area should be used if possible.

The use of engineering and administrative controls should reduce noise exposure to the point where the hazard to hearing is eliminated or at least more manageable.

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 80 dBA sound levels, or
- 120 dB peak sound pressure level or greater

Types of Hearing Protective Devices Hearing protective devices include the following:

a. Insert Type Earplugs

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.

2. Formable Earplugs (continued)

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 Office of Health and Safety. In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 80 dBA or lower. Hearing protection will be evaluated for the specific noise environments in which the protector will be used.

Issuance of Hearing Protective Devices

The issuance of hearing protective devices is handled through the Safety and Health Manager. The Safety and Health Manager will issue and fit the initial hearing protective devices (foam inserts, disposables). Instruction on the proper use and care of earplugs and earmuffs will be provided whenever HPDs (hearing protective devices) are dispensed. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The Safety and Health Manager will dispense ear muffs when necessary and will maintain a supply of disposable earplugs. These will dispensed to employees at no cost to them.

Use of Hearing Protective Devices

a. Always use and maintain HPDs as originally intended and in accordance with instructions provided.
b. Earmuff performance may be degraded by anything that compromises the cushion-to-circumaural flesh seal. This includes other pieces of personal protective equipment such as eyewear, masks, faceshields, and helmets.

Maintenance of Hearing Protective Devices

a. 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 before use. Wet or damp earplugs should not be placed in their containers. Cleaning should be done as needed.
b. 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 n use, ear muffs should be placed in open air to allow moisture that may have been absorbed into the cups to evaporate.

Hearing Protection Performance Information

The maximum of sound attenuation one gets when wearing hearing protection devices is limited by human body and bone conduction mechanisms. Even though a particular device may provide outstanding values of noise attenuation the actual noise reductions may be less because of the noise surrounding the head and body bypasses the hearing protector and is transmitted through tissue and bone pathways to the inner ear.

The term “double hearing protection” is misleading. The attenuation provided from any combination earplug and earmuff is not equal to the sum of their individual attenuation values.

MEDICAL SURVEILLANCE

Notification

Upon identification of employees whose 8-hour TWA (Time-Weighted Average) equals or exceeds 80 dBA, the Safety and Health Manager will recommend to the employee's Supervisor, in writing, of the need to enroll certain employee(s) in the Hearing Conservation Medical Surveillance Program. Information supplied to the Safety and Health Manager will include the employee(s) name, supervisor's name, telephone number, and the noise levels recorded in the employee's work area, including dosimetry data. It will be the responsibility of the Supervisor to enroll his/her employee in the Hearing Conservation Medical Surveillance Program.

In work locations where either through administrative or engineering controls, noise levels are found to have fallen such that the employee's 8-hour TWA is below 80 dBA, the Safety and Health Manager shall notify the employee's Supervisor, by memo, that the employees working in that area are no longer required to be enrolled in the Hearing Conservation Program. The final decision as to an employee's enrollment status will be left with the Company Physician.

The results of area and personal remonitoring shall be forwarded to the Clinic upon completion of the noise surveys.

Any personnel experiencing difficulty in wearing assigned hearing protection (i.e., irritation of the canals, pain) will be advised to immediately report this to their supervisor and make arrangements to go to the Company Physician for evaluation as soon as possible.

Audiometric Testing

The Company Physician has the responsibility for administering the Audiometric Testing Program portion of the Company Hearing Conservation Program. The object of the audiometric testing program is to identify workers who are beginning to lose their hearing and to intervene before the hearing loss becomes worse. Audiometric testing will be provided to all employees with exposure to noise levels of 80 dBA or greater. Initial testing will take place within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which future audiograms can be compared. When a mobile van is used, the baseline shall be established within 1 yr. Annual retesting will be performed for all personnel enrolled in the Hearing Conservation Medical Surveillance Program. Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing, within 21 days of the determination.

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees shall also be notified to avoid high levels of noise.

TRAINING

The training and education program will provide information about the adverse effects of noise and how to prevent noise-induced hearing loss. At a minimum, all training will cover the following topics:

a. Noise-induced hearing loss;
b. Recognizing hazardous noise;
c. Symptoms of overexposure to hazardous noise;
d. Hearing protection devices – advantages and limitations.
e. Selection, fitting, use, and maintenance of HPDs.
f. Explanation of noise measurement procedures.
g. Hearing conservation program requirements.

Employees will also be provided with copies of the OSHA noise standard (29 CFR 1910.95) and other handouts describing the Company Hearing Conservation Program.

Company employees shall be encouraged to use hearing protective devices when they are exposed to hazardous noise during activities at home; e.g., from lawn mowers, chain saws, etc.

All personnel identified for inclusion in the hearing conservation program should receive a minimum of one hour of initial instruction in the requirements of the program. Ideally this will be done when hearing protection is dispensed.
Appropriate refresher training annually thereafter and will be provided by the immediate supervisor. Supervisors will be provided annual training by the Office of Health and Safety.

Supervisors must contact the Safety Training Department to schedule training for new personnel assigned to work in noisy environments and for retraining of current personnel.

PROGRAM EVALUATION

Periodic program evaluations will be conducted to assess compliance with federal and state regulations and Company Program requirements. Both the monitoring and audiometric testing portions of the Company Hearing Conservation Program will be reviewed annually to assure its quality and effectiveness.

An evaluation of the Program, including wearer acceptance, appraisal of protection afforded, and field audits of hearing protection use and record keeping will be conducted at least annually. Items to be considered include:

a. Standard operating procedures
b. Training records and course content for supervisors and employees.
c. Maintenance of HPDs (hearing protection devices)
d. Field audits of HPD use
e. Review of recorded threshold shifts on OSHA log.

The findings of the Company Hearing Conservation Program evaluation will be documented, and this documentation will list plans to correct faults in the program and set target dates for the implementation of the plans.

RECORDKEEPING

All non-medical records (ex., work area and equipment surveys) will be maintained for a period of five years. Results of hearing tests and medical evaluations performed for hearing conservation purposes as well as noise exposure documentation shall be recorded and shall be a permanent part of an employee's health record.

All personnel who routinely work in designated hazardous noise areas shall be identified and a current roster of such personnel shall be maintained and by the Safety and Health Manager, and updated periodically.

NOISE

Supervisors and exposed workers must become aware of and understand about the adverse effects of noise and how to prevent noise-induced hearing loss. People exposed to hazardous noise must take positive action, if progressive permanent hearing loss is to be prevented. Each exposed worker and supervisor should know the following.

A. Noise exposure may result in permanent damage to the auditory system and there is no medical or surgical treatment for this type of hearing loss. Though the use of a hearing aid may provide some benefit, normal hearing will not be restored. Many people don't realize loud sounds can cause hearing loss. Furthermore, in its initial stages, the person may not notice a problem since noise-induced hearing loss is invisible, painless, and occurs in the high frequencies. It is dangerous to ignore the temporary characteristics of noise-induced hearing loss (such as ringing or buzzing in the ears, excessive fatigue, etc.).

B. Each person should know how to recognize hazardous noise even if a noise survey has not been conducted an/or warning signs posted. Recognizing and understanding the adverse effects

of off-duty noise exposures is also important. The best rule to follow is: “If you have to shout at arms length (approximately three feet) to talk face-to-face, you are probably being exposed to hazardous levels of noise.”

C. Preventing noise-induced hearing loss is accomplished by reducing both the time and intensity of exposure. Reducing exposure time is accomplished by avoiding any unnecessary exposure to loud sound. Reducing intensity is usually accomplished by wearing personal hearing protection. Each person must be able to properly wear and care for the particular type of hearing protection selected. Speech communication is difficult in high intensity noise. However, most people don’t realize it’s easier to understand speech if hearing protection is worn in a hazardous noise environment. Hearing protection reduces the noise and the level of speech, resulting in a more favorable listening level. Hearing protection reduces the intensity of frequencies above the speech range; thus, reducing the noise and accentuating speech. People who claim wearing hearing protection makes it difficult to hear speech are probably in noise levels less than 85 dBA or have already developed a hearing loss.

D. Each person must know how to tell if they have been overexposed to loud sound. Overexposure may occur even while wearing hearing protection. Earplugs and/or earmuffs alone may not be enough protection. Each time a temporary threshold shift (TSS) occurs, a certain degree of permanent loss results. The recognizable symptoms of overexposure are described as “dullness in hearing or ringing in the ears.”

Drug & Alcohol Program

Scope

SEI Solutions is committed to security and protection of its employees from problems arising from substance abuse. To ensure the productivity of our workforce, the security of our facility and our customers facilities, and to ensure our overall business is not hindered by substance abuse, SEI Solutionshas established a Drug and Alcohol Program. The program will also promote morale, reduce the potential for jobsite accidents, and also reduce absenteeism.

Policy

Because our company is concerned about our Employee's Health, Jobsite Safety, Quality of work, Public and Customer Liability, and Regulatory Compliance, SEI Solutions is committed to a drug and alcohol free workplace. Our company Drug and Alcohol Program statement is:

The use, possession, or sale, of illegal drugs is not consistent with SEI Solutions' objective of conducting services in a safe and professional manner. Accordingly, no representative, employee, contractor, or visitor shall possess or use illegal drugs during working hours or on the companies or customers property at any time. Additionally, no representative, employee, contractor, or visitor shall report to work while under the influence of alcohol or illegal drugs.

Any violation of this policy will result in the following action:

> Any employee who engages in such conduct will be subject to disciplinary action up to and including termination. The taking of prescribed drugs under the direction of a physician is allowed as long as the employee taking prescribed drugs notifies their supervisor before performing any work. Also the unlawful use or affiliation with drugs or narcotics outside of work will constitute grounds for disciplinary action, up to and including termination.

All employees are given a copy of our Drug and Alcohol policy statement and will be required to sign an acknowledgement form verifying their understanding.

If an employee has a Drug or Alcohol problem, it is their responsibility to seek and complete treatment. We encourage them to contact:

> BCRC EAP

If someone you know has a drug problem, ask them to get help. If nothing is done, that person could adversely affect the well being of themselves, their family, and the company.

Program Administrator

The Health and Safety Director, is our company's Drug and Alcohol Program Administrator, and is responsible for maintaining and developing our Drug and Alcohol Program. The Health and Safety Director is responsible for all aspects of the program and has the authority to make necessary decisions and ensure the program is successful. The Health and Safety Director is qualified through the appropriate experience and training that is associated with the complexity of the program.

Drug and Alcohol Testing

We retain the right to test our employees for alcohol and drugs according to the following guidelines:

- Pre-employment.
- Following any work-related injury that requires medical attention. (Employees must be transported to the testing facility within 1 hour)
- Following any accident that results in property damage. (Employees must be transported to the testing facility within 1 hour)
- Reasonable suspicion. (Employees must be transported to the testing facility within 1 hour or as soon as possible)
- Random Testing
- Upon return from extended absences
- Within 12 months from the last test date
- For any customer related reason

If a test reveals a positive result, then

Applicants who test positive for illegal drugs or alcohol will be denied employment.

An employee with a positive test result for illegal drugs or alcohol following a work related accident or injury is subject to disciplinary action, up to and including, suspension without pay, or discharge , loss of Workers' Compensation and medical indemnity benefits.

An employee with a positive test result for illegal drugs or alcohol for random testing, reasonable suspicion, or upon return from an extended absences is subject to disciplinary action, up to and including, suspension without pay, or discharge.

Any employee found switching, substituting, diluting, or adulterating or otherwise tampering with any body fluids used for testing will be subject to the same disciplinary action as an employee with a positive test result.

Insufficient Specimen (Drug & Alcohol testing)

An employee who provides an insufficient specimen of urine for a required drug test or insufficient saliva or breath for a required alcohol test must be examined by a medical professional, at the employee's expense. If the employee refuses the examination it will be considered a refusal to submit a required drug screen.
If the medical examination fails to identify a medical explanation for the employee's inability to provide a specimen, the employee shall be considered to have refused to submit to a required drug test. If a medical explanation is identified, the drug test will be canceled and no further action will be taken.
The MRO, in consultation with the medical professional, will order the medical exam, and will have the final authority in this determination.

See the Drug and Alcohol Testing section later in this written program for more details.

Company-Sponsored Activities

The Company prohibits the use of alcohol during company-sponsored activities.

Supervisor Training

Supervisors are the key to the success of our policy. As the people in direct contact with employees, supervisors can detect performance problems that may indicate substance abuse. Supervisors are responsible for:

1. Observing and documenting unsatisfactory work performance or behavior;

2. Talking to employees about work problems and what needs to be done about them (i.e., contacting an assistance program or local resources); and

3. Other responsibilities.

In order to carry out their responsibilities properly, supervisors must understand the substance abuse policy, be able to explain the policy to employees, and know when to take action.

Our supervisors are *not* responsible for diagnosing substance abuse problems and treating substance abuse problems.

Our supervisors are trained to observe employees' job performance noting the following items:

1. Physical signs: Unusual clumsiness and frequent illness;
2. Mood: Unusually lighthearted one day and depressed the next;
3. Absenteeism: More than usual;
4. Actions: Violent reactions when things go wrong or when upset;
5. Accidents: Increased number of accidents; and
6. Relationships: Easily irritated by others; would prefer being left alone rather than interacting with other employees.

Other training topics we cover with our supervisors include the following:

- Information on specific drugs,
- Methods of detecting drug and alcohol use,
- Insurance coverage for substance abuse treatment,
- Prevention and education strategies, and
- Background on drug testing issues.

The company training program uses classroom instruction that uses lectures, discussions, videotapes, and/or conference formats.

The Safety Department is responsible for providing supervisor training.
The Health and Safety Director and/or Safety Manager is responsible for conducting the training.

Employee Education and Awareness

Our employees must understand and remain aware of our ongoing commitment to a drug-free workplace. All new and current employees must successfully complete Evolution Industrial Cleaning's Employee Education and Awareness Program.

The Safety Department will identify when each employee will receive retraining. The Safety Department and/or Safety Manager is responsible for conducting this training.

The company training program uses Classroom instruction including lecture, discussion, video, and/or conferences.

Through training, SEI Solutionsensures that employees are knowledgeable in the following:

1. Dangers of drug abuse,

2. Our drug-free workplace policy,
3. The availability of any drug counseling programs,
4. The possible penalties for drug abuse violations occurring in the workplace,
5. How drugs and alcohol actually affect the company and the employee including productivity,
6. Product quality,
7. Absenteeism,
8. Health care costs and/or accident rates,
9. Testing procedures,
10. Health effects of alcohol and drugs,
11. How drugs affect the community,
12. Illegal drugs (what they look like, how they are used, their effects),
13. The symptoms of overdose and withdrawal),
14. How the use of alcohol and drugs can influence their children's behavior,
15. How to help others avoid involvement in substance abuse, and
16. How to recognize the signs of substance abuse.

Employee Assistance

Employees often face problems that can affect their job performance. These problems come from many sources: substance abuse, family difficulties, financial troubles, or emotional upsets. To help employees deal with their problems, SEI Solutionsrecommends contacting the following counseling center:

Perspectives EAP Center
1-800-456-6327

Drug and Alcohol Random Testing

SEI Solutionsrequires all employees in safety sensitive positions and/or any employee at any time to participate in a random selection and/or random test for alcohol or controlled substances while performing work.

The number of tests to be performed each calendar year will depend on the number of employees employed at the time of selection. The selection process will be performed by the Building & Construction Resource Center, Inc. (BCRC). The BCRC communicates with the Safety Manager to make him aware of the selections for the standard and DOT random testing.

Medical Review of test results

A Medical Review Officer (MRO) will review all drug test positives prior to verification of positive test results. The MRO will review confirmed positive test results to ensure proper procedure, protocol, and reporting. The MRO will interview the individual who has a confirmed positive test result by telephone to investigate whether a legal prescription has caused the specimen to test positive. If the individual has no legal prescription, the MRO will report a verified positive to the Program Administrator.

The Medical Review Officer for SEI Solutions is designated by Building & Construction Resource Center, Inc. (BCRC)

The Minimum Positive Test Levels are:

Drug Class	Initial	Confirmation
Amphetamines	1000 ng/ml	500 ng/ml
Cannabinoids	50 ng/ml	15 ng/ml
Cocaine	300 ng/ml	150 ng/ml
Opiates*	2000 ng/ml	2000 ng/ml
Phencyclidine (PCP)	25 ng/ml	25 ng/ml
Barbiturates	300 ng/ml	200 ng/ml
Benzodiazepines	300 ng/ml	200 ng/ml
Methadone	300 ng/ml	200 ng/ml
Propoxyphphene	300 ng/ml	200 ng/ml

* Opiates reported as Codeine, Morphine, and 6-Monoacetylmorphine.

Blood-alcohol testing level at or above 0.02% is a violation of this policy. Blood, saliva, or breath screen tests are acceptable.

The number of tests randomly conducted each year will be 50% for drugs and 50% for alcohol of the random selection pool.

An employee who has not been randomly tested in a two-year period will be required to take a Pre-Access test to comply with customer requirements.

Recordkeeping

Safety Department is responsible for maintaining all records and documentation related to employee training and testing.

Conviction Notification

SEI Solutions will ensure that the contracting agency is notified within 10 days after receiving notice that an employee has been convicted of violating any criminal drug statute.

Employee Sanction

SEI Solutions will ensure that any employee, who is convicted of violating any criminal drug statute, will have sanctions imposed or will be required to satisfactorily participate in a drug abuse assistance or rehabilitation program.

Customer/Client and Regulatory Testing

SEI Solutions will require employees to be considered in a random selection for annual testing as per the Department of Transportation regulatory requirements.

Customer/Client and Regulatory required testing shall be conducted as required by the customer/client regulatory authority. If an employee tests positive in a client test, he or she will be removed from the client premises and may be tested for reasonable suspicion under the SEI Solutions policy.

Definitions

A. SEI Solutions Personnel: any of SEI Solutions employees, agents, or subcontractors.

B. Company Property: all real or tangible personal property, including but not limited to facilities, buildings, vehicles, products and equipment either owned or controlled by SEI Solutions LLC.

C. Prohibited Substances : (1) illicit or legal drugs that have not been legally prescribed for the individual and controlled substances, look-alike, designer and synthetic drugs and mood or mind altering substances, (2) prescribed drugs used in a manner inconsistent with the prescription, and (3) alcoholic beverages.

D. Reasonable Suspicion: a belief based on objective and legitimate facts sufficient to lead a reasonable person to suspect that the individual's behavior might be influenced by drugs or alcohol.

E. Under the Influence: the presence of a Prohibited Substance in the body fluids that affects an individual in any detectable manner. The symptoms of influence may be, but are not limited to, slurred speech or difficulty in maintaining balance.

F. Safety Sensitive: has a predictable exposure to a catastrophic operational incident and has access to operations where failure could result in serious harm to public or employees well being, Company Property, Customers Property, or the environment. This classification includes, but is not limited to, Supervisors, Project Managers, Operators of Company Vehicles or equipment.

ACKNOWLEGEMENT OF DRUG & ALCOHOL PROGRAM

1. I understand that SEI Solutions LLC has a policy against the use, possession, sale or distribution of illegal drugs by its employees and applicants for employment. I further understand that the employer has adopted pre-employment, in-service, random, reasonable suspicion, and the customer/client and regulatory drug/alcohol testing programs as methods of implementing that policy.

2. I hereby consent to the taking of samples of my hairs, blood, breath, or urine by the employer, or its agents, for the purpose of the above drug/alcohol testing program, and to the testing of such samples by any qualified drug testing laboratory designated by the employer. I hereby further consent to the release of any test reports on such samples, or other related medical information from the laboratory, to the employer's authorized management personnel and to the use of all such reports or other information by the employer in its assessment of my employment application.

3. I understand that my refusal to consent to such testing will result in my disqualification from further consideration for employment.

4. I also understand that determining my suitability or fitness for employment with the employer is with the sole discretion of the employer and that a positive test finding will result in my disqualification from further consideration for employment with SEI Solutions LLC.

5. I release and discharge the employer and any of its related companies, the laboratory selected by the employer, and the officers, directors, employees and agents of each of the fore mentioned from any and all claims or actions relating to such testing, including the taking of samples, the testing process, procedures and analysis and disclosure and utilization of the test results in considering my employment.

I have received, read and understand the attached DRUG & ALCOHOL PROGRAM, including the pre-employment, in-service, random, reasonable suspicion, and the customer/client and regulatory testing requirements for employment.

_____

Printed Name

_____ _____

Employee Signature **Date**

Bloodborne Pathogens

Purpose:

SEI Solutions will ensure that all potentially infectious hazards within our worksites are evaluated and controlled. This standard practice instruction is intended to address comprehensively the issues of, evaluating and identifying potential infectious hazards, evaluating engineering controls, work practices, administrative controls, medical management, training, and establishing appropriate procedures.

Scope.

This section applies to all occupational exposure to blood or other potentially infectious materials as defined by paragraph (b) of this section.

Definitions. For purposes of this section, the following shall apply:

"Assistant Secretary" means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.
"Blood" means human blood, human blood components, and products made from human blood.
"Bloodborne Pathogens" means pathogenic micro-organisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).
"Clinical Laboratory" means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.
"Contaminated" means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
"Contaminated Laundry" means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.
"Contaminated Sharps" means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.
"Decontamination" means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.
"Director" means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.
"Engineering Controls" means controls (e.g., sharps disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogens hazard from the workplace.
"Exposure Incident" means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.
"Handwashing Facilities" means a facility providing an adequate supply of running potable water, soap and single use towels or hot air-drying machines.

"Licensed Healthcare Professional" is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.
"HBV" means hepatitis B virus.
"HIV" means human immunodeficiency virus.

"Occupational Exposure" means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
"Other Potentially Infectious Materials" means:
(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between
body fluids;
(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
(3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.
"Parenteral" means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.
"Personal Protective Equipment" is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.
"Production Facility" means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.
"Regulated Waste" means liquid or semi-liquid blood or other potentially infectious materials: contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable
of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.
"Research Laboratory" means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.
"Source Individual" means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of
drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.
"Sterilize" means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.
"Universal Precautions" is an approach to infection control. According to the concept of

Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.
"Work Practice Controls" means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

Exposure Control.

(1) Exposure Control Plan.

(i) The Company having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.

(ii) The Exposure Control Plan shall contain at least the following elements:

(A) The exposure determination required by paragraph (c)(2),

(B) The schedule and method of implementation for paragraphs (d) Methods of Compliance, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow- up, (g) Communication of Hazards to Employees, and (h) Recordkeeping, of this standard, and

(C) The procedure for the evaluation of circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of this standard.

(iii) The Company shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.20(e).

(iv) The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

(v) The Exposure Control Plan shall be made available to the Assistant Secretary and the Director upon request for examination and copying.

(2) Exposure Determination.

(i) The Company who has an employee(s) with occupational exposure as defined by paragraph (b) of this section shall prepare an exposure determination. This exposure determination shall contain the following:

(A) A list of all job classifications in which all employees in those job classifications have occupational exposure;

(B) A list of job classifications in which some employees have occupational exposure, and

(C) A list of all tasks and procedures or groups of closely related task and procedures in which occupational exposure occurs and that are performed by employees in job classifications listed in accordance with the provisions of paragraph (c)(2)(i)(B) of this standard.

(ii) This exposure determination shall be made without regard to the use of personal protective equipment.

Methods of Compliance.

(1) General. Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

(2) Engineering and Work Practice Controls.

(i) Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

(ii) Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

(iii) The Company shall provide handwashing facilities which are readily accessible to employees.

(iv) When provision of handwashing facilities is not feasible, the Company shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

(v) The Company shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

(vi) The Company shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

(vii) Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed except as noted in paragraphs (d)(2)(vii)(A) and (d)(2)(vii)(B) below. Shearing or breaking of contaminated needles is prohibited.

(A) Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.

(B) Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.

(viii) Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:

(A) puncture resistant.

(B) labeled or color-coded in accordance with this standard.

(C) leakproof on the sides and bottom; and

(D) in accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.

(ix) Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

(x) Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.
(xi) All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

(xii) Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.

(xiii) Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.

(A) The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of **all** specimens, the labeling/color-coding of specimens is not necessary

provided containers are recognizable as containing specimens. This exemption only applies while such
specimens/containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.

(B) If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.

(C) If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

(xiv) Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the Company
can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

(A) A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.

(B) The Company shall ensure that this information is conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, prior to handling, servicing, or shipping so that appropriate precautions will be taken.

(3) Personal Protective Equipment.

(i) Provision. When there is occupational exposure, the Company shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face
shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's
work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

(ii) Use. The Company shall ensure that the employee uses appropriate personal protective equipment unless the Company shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have
prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the

circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

(iii) Accessibility. The Company shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to
those employees who are allergic to the gloves normally provided.

(iv) Cleaning, Laundering, and Disposal. The Company shall clean, launder, and dispose of personal protective equipment required by paragraphs (d) and (e) of this standard, at no cost to the employee.

(v) Repair and Replacement. The Company shall repair or replace personal protective equipment as needed to maintain its effectiveness, at no cost to the employee.

(vi) If a garment(s) is penetrated by blood or other potentially infectious materials, the garment(s) shall be removed immediately or as soon as feasible.

(vii) All personal protective equipment shall be removed prior to leaving the work area.
(viii) When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

(ix) Gloves. Gloves shall be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures except as specified in paragraph (d)(3)(ix)(D); and when handling or touching contaminated items or surfaces.

(A) Disposable (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

(B) Disposable (single use) gloves shall not be washed or decontaminated for re-use.

(C) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

(D) If the Company, in a volunteer blood donation center, judges that routine gloving for all phlebotomies is not necessary then the Company shall:

(1) Periodically reevaluate this policy;
(2) Make gloves available to all employees who wish to use them for phlebotomy;
(3) Not discourage the use of gloves for phlebotomy; and

(4) Require that gloves be used for phlebotomy in the following circumstances:

(i) When the employee has cuts, scratches, or other breaks in his or her skin;

(ii) When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and

(iii) When the employee is receiving training in phlebotomy.

(x) Masks, Eye Protection, and Face Shields. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

(xi) Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

(xii) Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopedic surgery).

(4) Housekeeping.

(i) General. The Company shall ensure that the worksite is maintained in a clean and sanitary condition. The Company shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

(ii) All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

(A) Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.

(B) Protective coverings, such as plastic wrap, aluminum foil, or imperviously backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon
as feasible when they become overtly contaminated or at the end of the work shift if they may have become contaminated during the shift.

(C) All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

(D) Broken glassware which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

(E) Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

(iii) Regulated Waste.

(A) Contaminated Sharps Discarding and Containment.

(1) Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

(i) Closable.
(ii) Puncture resistant.
(iii) Leakproof on sides and bottom; and
(iv) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

(2) During use, containers for contaminated sharps shall be:

(i) Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);
(ii) Maintained upright throughout use; and
(iii) Replaced routinely and not be allowed to overfill.

(3) When moving containers of contaminated sharps from the area of use, the containers shall be:

(i) Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(ii) Placed in a secondary container if leakage is possible. The second container shall be:

(A) Closable.
(B) Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and
(C) Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

(4) Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

(B) Other Regulated Waste Containment.

(1) Regulated waste shall be placed in containers which are:

(i) Closable.
(ii) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping.
(iii) Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and
(iv) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(2) If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

(i) Closable.
(ii) Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping.
(iii) Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and
(iv) Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

(C) Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

(iv) Laundry.

(A) Contaminated laundry shall be handled as little as possible with a minimum of agitation.

(1) Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

(2) Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.

(3) Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

(B) The Company shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.

(C) When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color- coded in accordance with paragraph (g)(1)(i).

Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

(1) General.

(i) The Company shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

(ii) The Company shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow up, including prophylaxis, are:

(A) Made available at no cost to the employee.

(B) Made available to the employee at a reasonable time and place.

(C) Performed by or under the supervision of a licensed physician or by

or under the supervision of another licensed healthcare professional; and

(D) Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).

(iii) The Company shall ensure that all lab-oratory tests are conducted by an accredited laboratory at no cost to the employee.

(2) Hepatitis B Vaccination.

(i) Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment 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.

(ii) The Company shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.

(iii) If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the Company shall make available hepatitis B vaccination at that time.

(iv) The Company shall assure that employees who decline to accept hepatitis B vaccination offered by the Company sign the statement in Appendix A.

(v) If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).

(3) Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the Company shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

(i) Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred.

(ii) Identification and documentation of the source individual, unless the Company can establish that identification is infeasible or prohibited by state or local law.

(A) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the Company shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's

blood, if available, shall be tested and the results documented.

(B) When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.

(C) Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

(iii) Collection and testing of blood for HBV and HIV serological status.

(A) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

(B) If the employee consents to baseline blood collection but does not give consent at that time for HIV serologic testing, the ample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

(iv) Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service.

(v) Counseling; and

(vi) Evaluation of reported illnesses.

(4) Information Provided to the Healthcare Professional.

(i) The Company shall ensure that the health-care professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.

(ii) The Company shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

(A) A copy of this regulation.

(B) A description of the exposed employee's duties as they relate to the exposure incident.

(C) Documentation of the route(s) of exposure and circumstances under which exposure occurred.
(D) Results of the source individual's blood testing, if available; and

(E) All medical records relevant to the appropriate treatment of the employee including vaccination status which are the Company's responsibility to maintain.

(5) Healthcare Professional's Written Opinion. The Company shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

(i) The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

(ii) The healthcare professional's written opinion for post-exposure evaluation and follow up shall be limited to the following information:

(A) That the employee has been informed of the results of the evaluation; and

(B) That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

(iii) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

(6) Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.

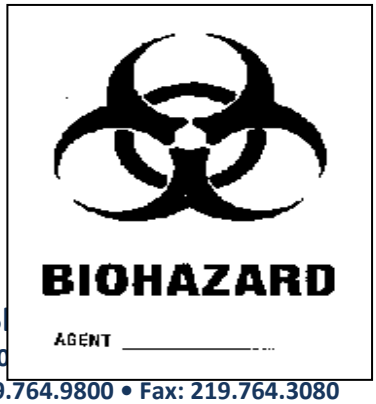
Communication of Hazards to Employees.

(1) Labels and Signs.

(i) Labels.

(A) Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i),(E),(F) and (G).

(B) Labels required by this section shall include the following legend:



(C) These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

(D) Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

(E) Red bags or red containers may be substituted for labels.

(F) Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of paragraph (g).

(G) Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirement.

(H) Labels required for contaminated equipment shall be in accordance with this paragraph and shall also state which portions of the equipment remain contaminated.

(I) Regulated waste that has been decontaminated need not be labeled or color-coded.

(ii) Signs.

(A) The Company shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:

(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)

(B) These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

(2) Information and Training.

(i) The Company shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

(ii) Training shall be provided as follows:

(A) At the time of initial assignment to tasks where occupational exposure may take place.

(B) Within 90 days after the effective date of the standard; and

(C) At least annually thereafter.

(iii) For employees who have received training on bloodborne pathogens in the year preceding the effective date of the standard, only training with respect to the provisions of the standard which were not included need
be provided.

(iv) Annual training for all employees shall be provided within one year of their previous training.

(v) The Company shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

(vi) Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

(vii) The training program shall contain at a minimum the following elements:

(A) An accessible copy of the regulatory text of this standard and an explanation of its contents.

(B) A general explanation of the epidemiology and symptoms of bloodborne diseases.

(C) An explanation of the modes of transmission of bloodborne pathogens.

(D) An explanation of the Company's exposure control plan and the means by which the employee can obtain a copy of the written plan.

(E) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.

(F) An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment.

(G) Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.

(H) An explanation of the basis for selection of personal protective equipment.

(I) Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.

(J) Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.

(K) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.

(L) Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.

(M) An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and

(N) An opportunity for interactive questions and answers with the person conducting the training session.

(viii) The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

(ix) Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or
HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.

(A) The Company shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.

(B) The Company shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.

(C) The Company shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The Company shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.

Recordkeeping.

(1) Medical Records.

(i) The Company shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.20.
(ii) This record shall include:

(A) The name and social security number of the employee.

(B) A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2).

(C) A copy of all results of examinations, medical testing, and follow up procedures as required by paragraph (f)(3).

(D) The Company's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and

(E) A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B), (C) and (D).

(iii) Confidentiality. The Company shall ensure that employee medical records required by paragraph (h)(1) are:

(A) Kept confidential; and

(B) Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

(iv) The Company shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.20.

(2) Training Records.

(i) Training records shall include the following information:

(A) The dates of the training sessions.

(B) The contents or a summary of the training sessions.

(C) The names and qualifications of persons conducting the training; and

(D) The names and job titles of all persons attending the training sessions.

(ii) Training records shall be maintained for 3 years from the date on which the training occurred.

(3) Availability.

(i) The Company shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.

(ii) Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.

(iii) Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

(4) Transfer of Records.

(i) The Company shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

(ii) If the Company ceases to do business and there is no successor Company to receive and retain the records for the prescribed period, the Company shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

APPENDIX A TO §1910.1030

HEPATITIS B VACCINE DECLINATION

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. however, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signature _____ Date _____

Ergonomics

Purpose:

This program covers all jobs where there are work related, musculoskeletal disorder hazards. The purpose of this program is to effectively eliminate or control Work-related Musculoskeletal Disorders (WMSD) and hazards by providing management leadership and employee involvement in the identification and resolution of hazards and by providing training, medical management and evaluation as an on-going process.

Ergonomics is the science of fitting jobs to people. People vary enormously in height, weight, in physical strength, in ability to handle information and in many other ways. Ergonomics uses information about human abilities, attributes and limitations to ensure that our equipment, work and workplaces allow for these variations.

The Company's goal is to reduce employee injuries and illnesses, absenteeism, employee turnover, and to increase Company productivity and quality.

Employees are highly encouraged to bring their concerns to supervisors and management. Feed back from employees is an important means of identifying ergonomic hazards. When an WMSD is identified, the Safety and Health Manager will provide a response and recommended action within 48 hours of receiving notification of the hazards or condition.

Program Elements:

1. Management Leadership & Employee Participation
2. Hazard Identification & Information
3. Job Hazard Analysis & Control
4. Training
5. Medical Management
6. Program Evaluation
7. Records

Element 1: Management Leadership & Employee Involvement

Management will:

(1) Assign & communicate responsibilities for setting up and managing the ergonomics program. Managers and employees must know what is expected of them and how they are held accountable for meeting those responsibilities.

(2) Provide those persons with the authority, resources, information and training necessary to meet their responsibilities.

(3) Examine existing policies and practices to ensure they encourage reporting and

do not discourage reporting.

(4) Identify at least one person to:

(i) Receive and respond promptly to reports about signs and symptoms of WMSDs, WMSD hazards and recommendations

(ii) Take action, where required, to correct identified problems

(5) Communicate regularly with employees about the program and their concerns about WMSDs. This shall be accomplished through safety and health committees, postings on employee bulletin boards and routine safety training meetings.

Employees will be provided:

(1) A way to report signs and symptoms of WMSDs and WMSD hazards, and to make recommendations about appropriate ways to control them. Reporting procedures include notification of immediate supervisor, ergonomic suggestion forms and medical management forms. Any one of these methods constitute a means of reporting and will require action on the part of the Safety and Health Manager.

(2) Prompt responses to their reports and recommendations. 48 hour response will be provided for all reports of WMSDs and WMSD hazards..

(3) Access to information about the ergonomics program. This program is available to all employees for review.

(4) Ways to become involved in developing, implementing and evaluating:

(i) Job hazard analysis and control. This is accomplished by participation on safety & health committees, suggestions for supervisors & management, review and comment on existing job hazard analysis and other appropriate means of communication.

(ii) Training. Feedback from employees on the quality and usefulness of ergonomic training will be reviewed by the program administrator to be used for training modifications to improve effectiveness.

(iii) The effectiveness of the program and control measures. Safety & Health Committees are the primary means of employee involvement in this area. Additionally, all comments, recommendations and suggestions will be forwarded to the program administrator for action and response comment.

Element 2: Hazard Identification & Information

Hazard Identification is accomplished by:

(1) Reports (written or verbal), WMSD symptoms, and hazards or control recommendations from employees and supervisors.

(2) Review of existing safety & health records for WMSDs and WMSD hazards.

(3) Routine facility safety & health inspections by management and supervisors

Employee Information-

For those current and new employees in manufacturing operations, manual handling operations, and other jobs with WMSDs, the following information will be provided.:

(1) How to recognize the signs and symptoms of WMSDs, and the importance of early reporting of signs and symptoms

(2) Hazards that are reasonably likely to be causing or contributing to WMSDs

(3) How to report signs and symptoms of WMSDs and WMSD hazards, and make recommendations

Information Methods include, but are not limited to, information sheets, videotapes, or classes. Information will be provided in a way that employees are able to understand. Employees will be given an opportunity to ask questions, receive answers, and be provided information in the languages employees use and at levels they comprehend.

Element 3: Job Hazard Analysis & Control

Job Hazard Analysis-

The purpose of Job Hazard Analysis is to identify WMSD hazard elements to provide information for effective control measure. When WMSD hazards are identified, a full

JHA will be conducted and control measures implemented to eliminate or control the hazards to the extent feasible. NOTE: The purpose of job hazard analysis is to pinpoint the cause of the problem. If the cause is obvious, the Company may move directly to controlling the WMSD hazards without conducting all of the steps of job hazard analysis.
Job Hazard Analysis will include the following steps:

(1) Make a list of (or a representative sample of):

(i) Employees in the problem job; and

(ii) Employees who perform the same physical work activities but in another job. This is called a similar job. If employees in a similar job are exposed to the same WMSD hazards as employees in the problem job, the similar job also is a problem job. You must expand your ergonomics program to include that job and those employees;

(2) Ask those employees:

(i) Whether they are experiencing signs or symptoms of WMSDs;

(ii) Whether they are having difficulties performing the physical work activities of the job, and

(iii) Which physical work activities they associate with the problem;

(3) Observe employees performing the job in order to identify job factors that need to be evaluated; and

(4) Evaluate those job factors to determine which ones are reasonably likely to be causing or contributing to the problem.

Job Hazard Control Measures-

Successful control measure include the following either separately or in combination. NOTE: Where solutions are obvious and the hazards may be eliminated quickly, implementation of controls is permitted without following all of the steps of the control process. Interim control measures may be implemented, if practical, until permanent control measures are in place.

The Control Measure Process involves:

(1) Identification, evaluation and implementation of feasible control measures (interim and permanent) to control the WMSD hazards. This

includes prioritizing the control of WMSD hazards, where necessary.

(2) Tracking progress in controlling the WMSD hazards, particularly if prioritizing of control of the hazards is necessary.

(3) Communication of results of the job hazard analysis to other areas of the workplace (e.g., procurement, human resources, maintenance, design, and engineering) whose assistance may be needed to successfully control the WMSD hazard.

(4) Identification of hazards when equipment is changed, re-designed or purchased and when change occurs in processes or facilities.

Control Methods

(1) Engineering Controls, where feasible, are the preferred method for controlling WMSD hazards. Engineering controls are the physical changes to jobs that control exposure to WMSD hazards. Engineering controls act on the source of the hazard and control employee exposure to the hazard without relying on the employee to take self-protective action or intervention. Examples of engineering controls for WMSD hazards include changing, modifying or redesigning the following:

Workstations

Tools

Facilities

Equipment
Materials
Processes

(2) Work Practice Controls are controls that reduce the likelihood of exposure to WMSD hazards through alteration of the manner in which a job or physical work activities are performed. Work practice controls also act on the source of the hazard. However, instead of physical changes to the workstation or equipment, the protection work practice controls provide is based upon the behavior of managers, supervisors and employees to follow proper work methods. Work practice controls include procedures for safe and proper work that are understood and followed by managers, supervisors and employees. Examples of work practice controls for WMSD hazards include:

a. Safe and proper work techniques and procedures that are understood and

followed by managers, supervisors and employees.

b. Conditioning period for new or reassigned employees.
c. Training in the recognition of MSS hazards and work techniques that can reduce exposure or ease task demands and burdens.

(3) Administrative Controls are procedures and methods, typically instituted by the employer, that significantly reduce daily exposure to WMSD hazards by altering the way in which work is performed. Examples of administrative controls for WMSD hazards include:

Employee rotation
Job task enlargement
Adjustment of work pace (e.g., slower pace)
Redesign of work methods
Alternative tasks

Rest breaks

(4) Personal Protective Equipment (PPE) may be used as an interim control, but will not be used as a permanent control where other controls are feasible. PPE used for this purpose will be provide it at no cost to employees.

Continuing Control Process

After implementation of feasible permanent controls, the possibility exists that WMSD may continue or re-occur. In these cases the following steps will be taken.

(1) Promptly check out employee reports of signs and symptoms of WMSDs to determine whether medical management is needed.

(2) Promptly identify and analyze the WMSD hazards, and develop a plan for controlling them

(3) Track progress in implementing the plan and measure success in eliminating or reducing WMSDs further; and

(4) Continue to look for solutions for the problem job and implement feasible ones as soon as possible.

Element 4: Training

Training will be provided to

(1) All employees in problem jobs, and all employees in similar jobs that have been identified as problem jobs;

(2) Their supervisors; and

(3) All persons involved in setting up and managing the ergonomics program.

Training Topics

For	Employees must understand
Employees in problem jobs, employees in similar jobs that are problem jobs, and their supervisors	• How to recognize WMSD signs and symptoms, and the importance of early reporting. • How to report WMSD signs, symptoms and hazards, and make recommendations. • WMSD hazards in their jobs and the general measures they must follow to control WMSD hazards. • Job-specific controls and work practices that have been implemented in their jobs. • The ergonomics program and their role in it. • The requirements of this standard
Persons involved in setting up and managing the ergonomics program	• The ergonomics program and their role in it. • How to identify, evaluate and implement measures to control WMSD hazards. • How to identify and analyze WMSD hazards. • How to evaluate the effectiveness of ergonomics programs.

Training Frequency

For	*Training will be provided*
Employees in problem jobs, employees in similar jobs that are problem jobs, and their supervisors	• When the program is first set up in their jobs. • When they are initially assigned to problem jobs. • After control measures are implemented in their jobs.

	• Periodically as needed (i.e., significant changes to the job, new WMSDs or WMSD hazards are identified in the job, unsafe work practices observed) and at least every 3 years.
Persons involved in setting up and managing the ergonomics program	• When they are initially assigned to setting up and managing the ergonomics program. • Periodically as needed (i.e., program deficiencies revealed in evaluation, significant changes in ergonomics program) and at least every 3 years.

Element 5: Medical Management

The Company will make available prompt and effective medical management whenever an employee has a WMSD. (This means that when an employee reports signs or symptoms of a WMSD. All reports will be processed to determine whether medical management is necessary). Medical management, including recommended work restrictions, will be provided at no cost to the employee. Medical treatment protocols for WMSDs will be established by the health care professions.

Reports of WMSDs

(1) When reports of WMSDs are made, employees will be provided with prompt access to health care professionals (HCPs) for effective evaluation, treatment and follow up; and

(2) Information will be provided to HCPs to help ensure medical management is effective, and

(3) Written medical opinion will be obtained from the HCP and the employee will be promptly provided a copy.

Information to be provided to the health care professional-

(1) Descriptions of the employee's job and hazards identified in the hazard analysis,

(2) Descriptions of available changes to jobs or temporary alternative duty to fit the employee's capabilities during the recovery period,

(3) A copy of this program and OSHA standard, with medical management requirements pointed out; and

(4) Opportunities to conduct workplace walkthroughs.

Health care professional written opinion-

(1) The HCP's written opinion must contain:

(i) The work-related medical conditions related to the WMSD reported;

(ii) Recommended work restrictions, where necessary, and follow-up for the employee during the recovery period;

(iii) A statement that the HCP has informed the employee about results of the evaluation and any medical conditions resulting from exposure to WMSD hazards that require further evaluation or treatment; and

(iv) A statement that the HCP has informed the employee about other physical activities that could aggravate the WMSD during the recovery period.

(2) To the extent permitted and required by law, employee privacy and confidentiality will be maintained regarding medical conditions identified during the medical management process. HCPs will be instructed not to reveal in the written opinion or in any other communication with you specific findings, diagnoses or information that is not related to WMSD hazards in the employee's job.

Work Restriction Policy-

(1) Work restrictions recommended for the employee will be provided during the recovery period;

(2) The employee's total normal earnings, seniority, rights and benefits will be maintained when work restrictions are prescribed or are voluntarily provided by the company; and

(3) Necessary periodic follow-ups with the HCP will be provided for the employee during the recovery period.

Continuance of Work Restrictions Policy-

Employee's total normal earnings, seniority, rights and benefits will be maintained when work restrictions are recommended by the HCP or voluntarily provided by the company until the first of the following occurs:

(1) The employee is recovered and able to return to the job, OR

(2) Effective measures are implemented that control WMSDs hazards to the extent the job does not pose risk of harm to the employee even during the recovery period; OR

(3) There is a final medical determination that the employee is permanently unable

to return to the job, OR

(4) 6 months have passed.

Compensation Policy-

Direct compensation (total normal earnings, seniority, rights and benefits) may be reduced by the amount an employee receives during the work restriction period from any of the following:

(1) Workers' compensation payments for lost earnings

(2) Payments for lost earnings from a compensation or insurance program that is publicly-funded or funded by the company

(3) Income from employment with another employer made possible by virtue of the work restrictions.

Element 6: Program Evaluation

Evaluation of the ergonomics program and controls will be conducted periodically, and at least every 3 years, to ensure effective administration and management and compliance with regulatory requirements.

Program Evaluation Process-

The following procedures will be used to evaluate the effectiveness of the ergonomics program and control measures.

(1) Monitoring of program activities to ensure that all the elements of your ergonomics program are functioning.

(2) Selection and implementation of effectiveness measures, both activity and outcome measures, to evaluate the program and the controls to ensure that they are in compliance with regulatory requirements.

(3) Establishment of baseline measurements to provide a starting point for measuring the effectiveness of the program and the controls.

Program Evaluation Findings

All program deficiencies found will be corrected promptly.

Examples of Activity Measures	Examples of Outcome Measures
• Plan to implement ergonomics program has been developed. • Number of employee reports and recommendations. • Average time between employee reports and your response. • Length of time since the last review of safety and health records. • Number of hazards identified. • Number of employees who have received ergonomics information. • Number of jobs analyzed. • Number of jobs awaiting analysis. • Number of employees interviewed for job analyses and remaining to be interviewed. • Number of symptom surveys conducted. • Number of jobs controlled.	• Number of OSHA recordable MSDs. • Reported symptoms of WMSDs • WMSD incidence rates per job title. • Number of workers' compensation claims. • Number of lost-workdays WMSDs. • Average lost workdays per WMSD. • Severity rate of WMSDs. • Symptom survey results. • Annual medical costs for WMSDs. • Average medical costs per WMSD. • Annual workers' compensation costs. • Average workers' compensation costs per WMSD.
Examples of **Activity Measures (cont.)**	Examples of **Outcome Measures (cont.)**
• Number of job changes made. • Number of employees trained and waiting to be trained. • Number of worker hours devoted to the ergonomics program. • Annual expenditures on program and controls.	

Element 7: Records

Written records of the program will be maintained if:

(1) There is more than one worksite or establishment in which this job is performed by employees; OR

(2) The job involves more than one level of supervision; OR

(3) The job involves shift work.

Records and Retention Requirements-

The following table lists the required records and retention periods

Required Records	Retention Period
• Employee reports and company responses	3 years
• Results of job hazard analysis • Plans for controlling WMSD hazards • Evaluations of program and controls	3 years or until replaced by updated record
• Medical management records	The duration of the injured employee's employment plus 3 years

NOTE: Other regulatory requirements for record keeping of the Access to Employee Exposure and Medical Records Standard (29 CFR 1910.1020) will be followed in addition to the requirements of this program

Definition of Terms

Administrative controls are procedures and methods, typically instituted by the employer, that significantly reduce daily exposure to WMSD hazards by altering the way in which work is performed. Examples of administrative controls for WMSD hazards include:

- Employee rotation
- Job task enlargement
- Adjustment of work pace (e.g., slower pace)
- Redesign of work methods
- Alternative tasks
- Rest breaks

Exercise programs (e.g., stretching) are not prohibited, but they are not administrative controls under the OSHA standard.

Effectiveness measures are the indicators used to assess whether an ergonomics program and controls are successfully controlling WMSD hazards and reducing the number and severity of WMSDs. Effectiveness measures include both activity and outcome measures.

- **Activity measures** are indicators used to measure interim accomplishments in building and maintaining an ergonomics program. These measures are used to assess the functioning of the various activities in your program (e.g., number of hazards identified, number of employees trained).
- **Outcome measures** are indicators used to quantitatively assess long-term success of the program and interventions that have been put into place (e.g., number of lost workdays, number of hazards controlled, severity of WMSDs).

Engineering controls are physical changes to jobs that control exposure to WMSD hazards. Engineering controls act on the source of the hazard and control employee exposure to the hazard without relying on the employee to take self-protective action or intervention. Examples of engineering controls for WMSD hazards include changing, modifying or redesigning the following:

- Workstations
- Equipment
- Tools
- Materials
- Facilities
- Processes

Ergonomics is the science of fitting jobs to people. Ergonomics encompasses the body of knowledge about physical abilities and limitations as well as other human characteristics that are relevant to job design. Ergonomic design is the application of this body of knowledge to the design of the workplace (i.e., work tasks, equipment, environment) for safe and efficient use by workers. Good ergonomic design makes the most efficient use of worker capabilities while ensuring that job demands do not exceed those capabilities.

Health care professionals are persons educated and trained in the delivery of health care services who are operating within the scope of their license, registration, certification, or legally authorized practice when they are performing the medical management requirements of this standard.

Job factors are workplace conditions and physical work activities that must be considered when conducting a job hazard analysis in order to determine whether WMSD hazards are present in a job. This standard covers the following job factors:

THIS PROGRAM COVERS THESE JOB FACTORS	INCLUDING THESE COMPONENTS OF JOB FACTORS
Physical demands of the work tasks or job	• Force • Repetition • Work postures • Duration • Local contact stress

Workstation layout and space	• Work reaches • Work heights • Seating • Floor surfaces • Contact stress
Equipment used and objects handled	• Size and shape • Weight and weight distribution • Handles and grasp surfaces • Vibration
Environmental conditions	• Cold and heat • Glare (as related to awkward postures)
Work organization	• Work-recovery cycles • Work rate • Task variability

Known hazard means hazards in your workplace that you know are reasonably likely to cause or contribute to a WMSD. The following are known hazards covered by the OSHA ergonomic standard**:**

- WMSD hazards identified in insurance reports.
- WMSD hazards identified in consultant reports.
- WMSD hazards identified in prior OSHA inspections.
- WMSD hazards identified in self audits.
- WMSD hazards identified and communicated to you by HCPs.
- Accepted WMSD workers' compensation claims.

Manual handling operations are physical work activities meeting these criteria:

(1) They involve **lifting/lowering, pushing/pulling**, or **carrying**; **AND**

(2) They involve exertion of considerable force because the particular load is heavy **OR** the cumulative total of the loads during a workday is heavy (i.e., substantial loads); **AND**

(3) These manual handling work activities are a significant part of the employee's regular job duties.

Manufacturing operations cover a range of jobs that are directly involved in producing durable and non-durable goods. Manufacturing production jobs involve working supervisors and all non-supervisory employees who engage in fabricating, processing, assembling, and other services closely associated with manufacturing production. In this standard, manufacturing operations are limited to those that meet these criteria:

(1) They are performed in **manufacturing industries**; **AND**

(2) They are **production jobs** performed by employees and their supervisors in those industries; **AND**

(3) The production work activities are a significant part of the employee's regular job duties.

While each job must be considered on the basis of its actual duties, the following table lists job categories that typically fall inside and outside this definition:

EXAMPLES OF MANUFACTURING PRODUCTION JOBS	EXAMPLES OF JOBS THAT TYPICALLY ARE NOT MANUFACTURING PRODUCTION JOBS
Assembly line jobs producing: • Products (durable and non-durable) • Subassemblies • Components and parts • Paced assembly line jobs (assembling and disassembling) • Piecework assembly jobs (assembling and disassembling) and other time critical assembly jobs • Product inspection jobs (e.g., testers, weighers)	• Administrative personnel • Clerical staff • Supervisors and managers who do not perform production job • Technical staff (e.g., engineering, product development) • Analysts and programmers • Sales and marketing • Buyers/procurement • Customer service employees • Mail room

• Meat, poultry, and fish cutting and packing • Bindery jobs • Machine operation • Machine loading/unloading • Apparel construction jobs • Food preparation assembly line jobs • Commercial baking jobs • Cabinetmaking • Tire building • Warehouse jobs in manufacturing facilities • Rework specialists • Maintenance personnel	• Security guards • Cafeteria personnel • Grounds personnel (gardeners, grounds keepers) • Jobs in power plant in manufacturing facility • Janitors

NOTE: Some jobs that are not manufacturing production jobs may still be manual handling jobs under this program or the OSHA standard.
Medical management is the process for assuring that employees with WMSDs are provided with the following at no cost to employees:

- A mechanism for early reporting of signs and symptoms of WMSDs;
- Early assessment of reports;
- Access to prompt and effective evaluation, treatment and follow-up by HCPs;
- Work restrictions recommended by HCPs;

Medical management also includes the process of communicating with HCPs. Medical management does not include establishing specific medical treatments for WMSDs. Medical treatment protocols and procedures are established by the health care professions.

Musculoskeletal disorders (MSDs) are injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal disks. Examples of MSDs include:

- Carpal tunnel syndrome
- Epicondylitis
- Synovitis
- Muscle strains
- Tendinitis
- Rotator cuff tendinitis
- De Quervains' disease
- Carpet layers knee
- Trigger finger

- Raynaud's phenomenon
- Sciatica
- Low back pain

No cost to employees means that training, medical management and other requirements of this standard are provided to employees free of charge and while they are "on the clock."

Periodically means that a process or activity, such as records review or training, is performed on a **regular basis** which is appropriate for the conditions in the workplace. Periodically also means that the process or activity is conducted **as needed,** such as when significant changes are made in your workplace.

Personal protective equipment (PPE) are interim control devices worn or used while working to protect employees from exposure to WMSD hazards. In this standard, PPE includes items such as gloves and knee pads.

Physical work activities are the physical demands, exertions or functions of the task or job.

Problem job is any job in which you must set up a full ergonomics program, including job hazard analysis. The following are problem jobs in this standard:

(1) A manufacturing or manual handling job where a known hazard exists or a WMSD is reported; **AND**

(2) Any other job in your workplace where a WMSD is reported; **AND**

(3) A similar job in which employees are exposed to the same WMSD hazard as employees in a problem job.

Representative sampling is a strategy to adequately characterize exposure of a group of employees (i.e., employees in a problem job) by analyzing the exposure of a subset of that group rather than all members of the group. The employees selected for representative sampling analysis must be those who are reasonably believed to have the greatest exposure to WMSD hazards in the problem job, including each workshift, to correctly characterize and not underestimate the exposure of any employee in the problem job.

Resources mean the provisions necessary to develop, implement and maintain an effective ergonomics program. Resources include monetary provisions (e.g., equipment to perform job hazard analysis, training materials, controls) as well as other provisions (e.g., time to conduct job hazard analysis or review safety and health records).

Safety and health records are information generated at or for your workplace. Records include, for example, OSHA 200 and 300 logs, workers' compensation claims, WMSD-related medical reports and infirmary logs, employee reports of WMSDs or WMSD hazards, and insurance or consultant reports prepared for your workplace.

Signs (of WMSDs) are objective physical findings that are the basis for an OSHA recordable MSD. Examples of signs of WMSDs include:

- Decreased range of motion
- Decreased grip strength
- Loss of function
- Deformity
- Swelling
- Cramping
- Redness/loss of color

Similar jobs are jobs that involve the same physical work activities as a problem job, even if they are not defined by the same title or classification.

Symptoms (of WMSDs) are physical indications that your employee may be developing an WMSD. Symptoms can vary in their severity depending on the amount of exposure the employee has had. Often symptoms appear gradually as muscle fatigue or pain at work that disappears during rest. Usually symptoms become more severe as exposure continues (e.g., tingling continues when your employee is at rest, numbness or pain makes it difficult to perform the job, and finally pain is so severe that the employee is unable to perform physical work activities).

Examples of symptoms WMSDS include:

- Numbness
- Burning
- Pain
- Tingling
- Aching
- Stiffness

Temporary alternative duty jobs are assignments given to employees with WMSDs during the recovery period until the health care provider releases the employee from work restrictions.

Work practice controls are controls that reduce the likelihood of exposure to WMSD hazards through alteration of the manner in which a job or physical work activities are performed. Work practice controls also act on the source of the hazard. However, instead of physical changes to the workstation or equipment, the protection work practice controls provide is based upon the behavior of managers, supervisors and employees to follow proper work methods. Work practice controls include procedures for safe and proper work that are understood and followed by managers, supervisors and employees. Examples of work practice controls for WMSD hazards include:

- Safe and proper work techniques and procedures that are understood and followed by managers, supervisors and employees.
- Conditioning period for new or reassigned employees.

- Training in the recognition of MSD hazards and work techniques that can reduce exposure or ease task demands and burdens.

Work-related means that the physical work activities or workplace conditions in the job are reasonably likely to be causing or contributing to a reported MSD. For this standard, an MSD is work-related if:

(1) **WMSD hazards** are present in a job where an MSD has been reported; **AND**

(2) The hazards are reasonably likely to cause or contribute to the **type** of MSD reported; **AND**

(3) A **significant part** of the employee's **regular job duties** involves exposure to these WMSD hazards (i.e., not incidental exposure).

Work restrictions are any limitation placed on the manner in which an employee with an WMSD performs a job during the recovery period. Work restrictions include modifications and restrictions to the employee's current job, such as limiting or reducing the intensity or duration of exposure; and reassignment to temporary alternative duty jobs. Work restrictions also include complete removal from the workplace.

WMSD hazards are workplace conditions or physical work activities that cause or are reasonably likely to cause or contribute to an WMSD.

Fatigue Management Plan

Purpose:

This program covers all jobs where there are work related fatigue hazards.

The Company's goal is to reduce employee injuries and illnesses, absenteeism, employee turnover, and to increase Company productivity and quality.

Employees are highly encouraged to bring their concerns to supervisors and management. Feed back from employees is an important means of identifying ergonomic hazards. When a fatigue hazard is identified, the Safety and Health Manager will provide a response and recommended action within 48 hours of receiving notification of the hazards or condition.

Program Elements:

1. Management Leadership & Employee Participation
2. Hazard Identification & Information
3. Job Hazard Analysis & Control
4. Training
5. Medical Management
6. Program Evaluation
7. Records

Element 1: Management Leadership & Employee Involvement

Management will:

(1) Assign & communicate responsibilities for setting up and managing the fatigue management program. Managers and employees must know what is expected of them and how they are held accountable for meeting those responsibilities. All employees must report fit for duty at the beginning of their work assignments. Supervisors must monitor employees during work assignments to make sure they remain fit for duty for the duration of the shift. Fatigue, illness and other factors may impact an employee's fitness level as work progresses.

(2) Provide those persons with the authority, resources, information and training necessary to meet their responsibilities.

(3) Examine existing policies and practices to ensure they encourage reporting and do not discourage reporting.

(4) Identify at least one person to:

(i) Receive and respond promptly to reports about signs and symptoms fatigue

(ii) Take action, where required, to correct identified problems

(5) Communicate regularly with employees about the program and their concerns about fatigue. This shall be accomplished through safety and health committees, postings on employee bulletin boards and routine safety training meetings.

Employees will be provided:

(1) A way to report signs and symptoms of fatigue, and to make recommendations about appropriate ways to control them. Reporting procedures include notification of immediate supervisor, and senior management if needed. . Any one of these methods constitute a means of reporting and will require action on the part of the Safety and Health Manager.

(2) Prompt responses to their reports and recommendations.

(3) Access to information about the fatigue management program. This program is available to all employees for review.

(4) Ways to become involved in developing, implementing and evaluating:

(i) Job hazard analysis and control. This is accomplished by participation on safety & health committees, suggestions for supervisors & management, review and comment on existing job hazard analysis and other appropriate means of communication.

(ii) Training. Feedback from employees on the quality and usefulness of ergonomic training will be reviewed by the program administrator to be used for training modifications to improve effectiveness.

(iii) The effectiveness of the program and control measures. Safety & Health Committees are the primary means of employee involvement in this area. Additionally, all comments, recommendations and suggestions will be forwarded to the program administrator for action and response comment.

Element 2: Hazard Identification & Information

Hazard Identification is accomplished by:

(1) Reports (written or verbal), fatigue symptoms, and hazards or control recommendations from employees and supervisors. Employees in safety critical positions must report fatigue/tiredness and lack of mental acuity to supervision; as well as supervisory personnel to make safety critical decisions and take appropriate actions to prevent loss.

Employees must not chronically use over-the-counter or prescription drugs to increase mental alertness. Employees should be discouraged from taking any substance known to increase fatigue in that employee, including fatigue that sets in after the effects of the drug wear off.

(2) Review of existing safety & health records for fatigue hazards.

(3) Routine facility safety & health inspections by management and supervisors

Employee Information-

For those current and new employees in manufacturing operations, manual handling operations, and other jobs with fatigue hazards, the following information will be provided.:

(1) How to recognize the signs and symptoms of fatigue, and the importance of early reporting of signs and symptoms

(2) Hazards that are reasonably likely to be causing or contributing to fatigue

(3) How to report signs and symptoms of fatigue, and make recommendations

Information Methods include, but are not limited to, information sheets, videotapes, or classes. Information will be provided in a way that employees are able to understand. Employees will be given an opportunity to ask questions, receive answers, and be provided information in the languages employees use and at levels they comprehend.

Element 3: Job Hazard Analysis & Control

Job Hazard Analysis-

The purpose of Job Hazard Analysis is to identify fatigue hazard elements to provide information for effective control measure. When fatigue hazards are identified, a full JHA will be conducted and control measures implemented to eliminate or control the hazards to the extent feasible. NOTE: The purpose of job hazard analysis is to pinpoint the cause of the problem. If the cause is obvious, the Company may move directly to controlling the fatigue hazards without conducting all of the steps of job hazard analysis.

Job Hazard Analysis will include the following steps:

(1) Make a list of (or a representative sample of):

(i) Employees in the problem job; and

(ii) Employees who perform the same physical work activities but in another job. This is called a similar job. If employees in a similar job are exposed to the same fatigue hazards as employees in the problem job, the similar job also is a problem job.

(2) Ask those employees:

(i) Whether they are experiencing signs or symptoms of fatigue;

(ii) Whether they are having difficulties performing the work activities of the job, and

(iii) Which work activities they associate with the problem;

(3) Observe employees performing the job in order to identify job factors that need to be evaluated; and

(4) Evaluate those job factors to determine which ones are reasonably likely to be causing or contributing to the problem.

Job Hazard Control Measures-

Successful control measure include the following either separately or in combination. NOTE: Where solutions are obvious and the hazards may be eliminated quickly, implementation of controls is permitted without following all of the steps of the control process. Interim control measures may be implemented, if practical, until permanent control measures are in place.

The Control Measure Process involves:

(1) Identification, evaluation and implementation of feasible control measures (interim and permanent) to control the of fatigue. This includes prioritizing the control of fatigue hazards, where necessary.

(2) Tracking progress in controlling the fatigue hazards, particularly if prioritizing of control of the hazards is necessary.

(3) Communication of results of the job hazard analysis to other areas of the workplace (e.g., procurement, human resources, maintenance, design, and engineering) whose assistance may be needed to successfully control the fatigue hazard.

Control Methods

Evolution has set work hour limitations and will control job rotation schedules to control fatigue, allow for sufficient sleep, and increase mental fitness in an effort to control employee turnover and absenteeism.
Ergonomic equipment will be used to improve workstation conditions such as anti-fatigue mats for standing, lift assist devices for repetitive lifting, proper lighting and control of temperature, and other ergonomic devices as deemed appropriate.

Chairs will be provided for workers to sit periodically, and will provide periodic rest breaks for personnel.

Continuing Control Process

After implementation of feasible permanent controls, the possibility exists that WMSD may continue or re-occur. In these cases the following steps will be taken.

(1) Promptly check out employee reports of signs and symptoms of WMSDs to determine whether medical management is needed.

(2) Promptly identify and analyze the WMSD hazards, and develop a plan for controlling them

(3) Track progress in implementing the plan and measure success in eliminating or reducing WMSDs further; and

(4) Continue to look for solutions for the problem job and implement feasible ones as soon as possible.

Element 4: Training

Training will be provided to

(1) Initial and annual training must be provided on how to recognize fatigue, illness or other impairment and how to control fatigue through appropriate work and personal habits, and reporting of fatigue to supervision.

(2) Their supervisors; and

(3) All persons involved in setting up and managing the fatigue hazard program.

Element 5: Medical Management

The Company will make available prompt and effective medical management whenever an employee reports fatigue. (This means that when an employee reports signs or symptoms of fatigue. All reports will be processed to determine whether medical management is necessary). Medical management, including recommended work restrictions, will be provided at no cost to the employee. Medical treatment protocols for fatigue will be established by the health care professions.

Element 6: Program Evaluation

Work tasks to control fatigue will be analyzed and evaluated periodically.

Program Evaluation Process-

The following procedures will be used to evaluate the effectiveness of the fatigue management program and control measures.

(1) Monitoring of program activities to ensure that all the elements of your fatigue management program are functioning.

(2) Selection and implementation of effectiveness measures, both activity and outcome measures, to evaluate the program and the controls to ensure they are in compliance with regulatory requirements.

(3) Establishment of baseline measurements to provide a starting point for measuring the effectiveness of the program and the controls.

Element 7: Records

Written records of the program will be maintained if:

(1) There is more than one worksite or establishment in which this job is performed by employees; OR

(2) The job involves more than one level of supervision; OR

(3) The job involves shift work.

Records and Retention Requirements-

The following table lists the required records and retention periods

Required Records	Retention Period
• Employee reports and company responses	3 years
• Results of job hazard analysis • Plans for controlling fatigue hazards • Evaluations of program and controls	3 years or until replaced by updated record
• Medical management records	The duration of the injured employee's employment plus 3 years

NOTE: Other regulatory requirements for record keeping of the Access to Employee Exposure and Medical Records Standard (29 CFR 1910.1020) will be followed in addition to the requirements of this program

Lockout/Tagout Program

(The Control of Hazardous Energy)

(a) Scope, application, and purpose

(1) Scope

(i) This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or startup of the machines or equipment, or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy.

(ii) This standard **does not cover** the following:

(A) Installations under the exclusive control of electric utilities for the purpose of power generation, transmission, and distribution, including related equipment for communication or metering; and

(B) Exposure to electrical hazards from work on, near, or with conductors or equipment in electric utilization installations. and

(C) Oil and gas well drilling and servicing.

(2) Application.

(i) This standard applies to the control of energy during servicing/cleaning and/or maintenance of machines and equipment.

(ii) Normal production operations are not covered by this standard. Servicing/cleaning and/or maintenance which takes place during normal production operations is covered by this standard only if:

(A) An employee is required to remove or bypass a guard or other safety device; or

(B) An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Note: Exception to paragraph (a)(2)(ii): Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection

(iii) This standard **does not apply** to the following.

(A) Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

(B) Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines, provided that the Company demonstrates that

(1) continuity of service is essential.
(2) shutdown of the system is impractical; and
(3) documented procedures are followed, and
(4) special equipment is used which will provide proven effective protection for employees.

(3) Purpose.

(i) This section requires the Company to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy in order to prevent injury to employees.

(ii) When other standards in this part require the use of lockout or tagout, they shall be used and supplemented by the procedural and training requirements of this section.

(b) Definitions applicable to this section.

Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Capable of being locked out. An energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

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 or energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

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

Hot tap. A procedure used in the repair, maintenance, and services activities which

involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout. 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.

Lockout device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.
Normal production operations. The utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting up. Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout. 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.

Tagout 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.

(c) General.

(1) Energy control program. The Company shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that

before any employee performs any servicing 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 isolated from the energy source and rendered inoperative.

(2) Lockout/tagout.

(i) If an energy isolating device is not capable of being locked out, the Company's energy control program under paragraph (c)(1) of this section shall utilize a tagout system.

(ii) If an energy isolating device is capable of being locked out, the Company's energy control program under paragraph (c)(1) of this section shall utilize lockout, unless the Company can demonstrate that the utilization of a tagout system will provide full employee protection as set forth in paragraph (c)(3) of this section.

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

(3) Full employee protection.

(i) When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the Company shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

(ii) In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, the Company shall demonstrate full compliance with all tagout-related provisions of this standard together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection shall include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

(4) Energy control procedure.

(i) Procedures shall be developed, documented, and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.

Note: Exception: The Company need not document the required procedure for a particular machine or equipment, when all the following elements exist:

(1) The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shutting down which could endanger employees.
(2) The machine or equipment has a single energy source which can be readily identified and isolated.
(3) The isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment.
(4) The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
(5) A single lockout device will achieve a locked-out condition.
(6) The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
(7) The servicing or maintenance does not create hazards for other employees; and
(8) The Company, in utilizing this exception, has had no accidents involving the unexpected activation or reenergization of the machine or equipment during servicing or maintenance.

(ii) The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

(A) Specific statement of the intended use of the procedure.

(B) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy.

(C) Specific procedural steps for the placement, removal, and transfer of lockout devices or tagout devices and the responsibility for them; and

(D) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

(5) Protective materials and hardware.

The following Company-initiated rule relates to **29 CFR 1910.147(c)(5)**: ***437-002-0154 Unique Locks.*** *In addition to and not in lieu of the definition contained in 1910.147(b) for "lockout device," each person's lock shall have either a key or combination which is* ***unique*** *to that device.*

(i) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the Company for isolating, securing, or blocking of machines or equipment from energy sources. **(ii)** Lockout devices and tagout devices shall be singularly identified; shall be
the only devices(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

(A) Durable.

(1) Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
(2) Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.
(3) Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

(B) Standardized. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized. All locks used for our Lockout program will be blue in color and used only for Lockout purpose.

(C) Substantial.

***(1)* Lockout devices.** Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

***(2)* Tagout devices.** Tagout devices, including and their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

(D) Identifiable. Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

(iii) Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following:

Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.

(6) Periodic inspection.

(i) The Company shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed.

(A) The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.

(B) The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

(C) Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

(D) Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in paragraph (c)(7)(ii) of this section.

(ii) The Company shall certify that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

(7) Training and communication.

(i) The Company shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. All training and/or retraining must be documented, signed & certified. The training shall include the following:

(A) Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

(B) Each affected employee shall be instructed in the purpose and use of the energy control procedure.

(C) All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

(ii) When tagout systems are used, employees shall also be trained in the following limitations of tags:

(A) Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

(B) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

(C) Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, to be effective.

(D) Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

(E) Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

(F) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

(iii) Employee retraining.

(A) Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

(B) Additional retraining shall also be conducted whenever periodic inspection under paragraph (c)(6) of this section reveals, or whenever the Company has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

(D) The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

(iv) The Company shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

(8) Energy isolation. Lockout or tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

(9) Notification of employees. Affected employees shall be notified by the Company or authorized employee of the application and removal of lockout devices or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.

(d) Application of control. The established procedures for the application of energy control (the lockout or tagout procedures) shall cover the following elements and actions and shall be done in the following sequence:

(1) Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

(2) Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

(3) Machine or equipment isolation. All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

(4) Lockout or tagout device application.

(i) Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.

(ii) Lockout devices, where used, shall be affixed in a manner to that will hold the energy isolating devices in a "safe" or "off" position.

(iii) Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.

(A) Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.

(B) Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

(5) Stored energy.

(i) Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

(ii) If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

(6) Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.

(e) Release from lockout or tagout. Before lockout or tagout devices are removed and energy is restored to the machine or equipment; procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

(1) The machine or equipment. The work area shall be inspected to ensure that non-essential items have been removed and to ensure that machine or equipment components are operationally intact.

(2) Employees.

(i) The work area shall be checked to ensure that all employees have been safely positioned or removed.

(ii) After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed.

(3) Lockout or tagout devices removal. Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device.

Exception to paragraph (e)(3): When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the

direction of the Company, provided that specific procedures and training for such removal have been developed, documented, and incorporated into the Company's energy control program. The Company shall demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

(i) Verification by the Company that the authorized employee who applied the device is not at the facility.

(ii) Making all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout or tagout device has been removed; and

(iii) Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

(f) Additional requirements.

(1) Testing or positioning of machines, equipment, or components thereof. In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment, or component thereof, the following sequence of actions shall be followed:

(i) Clear the machine or equipment of tools and materials in accordance with paragraph (e)(1) of this section.

(ii) Remove employees from the machine or equipment area in accordance with paragraph (e)(2) of this section.

(iii) Remove the lockout or tagout devices as specified in paragraph (e)(3) of this section.

(iv) Energize and proceed with testing or positioning.

(v) Deenergize all systems and reapply energy control measures in accordance with paragraph (d) of this section to continue the servicing and/or maintenance.

(2) Outside personnel (contractors, etc.).

(i) Whenever outside servicing personnel are to be engaged in activities

covered by the scope and application of this standard, the on-site Company and the outside Company shall inform each other of their respective lockout or tagout procedures.

(ii) The on-site Company shall ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside Company's energy control program.

(3) Shift or personnel changes. Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

TYPICAL MINIMAL LOCKOUT PROCEDURE

Note: The following Appendix A to §1910.147 serves as a non-mandatory guideline to assist Company and employees in complying with the requirements of this section, as well as to provide other helpful information. Nothing in the Appendix adds to or detracts from any of the requirements of this section.

APPENDIX A – TYPICAL MINIMAL LOCKOUT PROCEDURE GENERAL

The following simple lockout procedure is provided to assist the Company in developing its procedures, so they meet the requirements of this standard. When the energy isolating devices are not lockable, tagout may be used, provided the Company complies with the provisions of the standard which require additional training and more rigorous periodic inspections. When tagout is used and the energy isolating devices are lockable, the Company must provide full employee protection (see paragraph (c)(3)) and additional training and more rigorous periodic inspections are required. For more complex systems, more comprehensive procedures may need to be developed, documented, and utilized.

LOCKOUT PROCEDURE

Purpose
This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Compliance with this program
All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

GOUP LOCKOUT PROCEDURE

A lockbox procedure will be utilized in Group Lockout procedures.
Under a lockbox procedure, a lock or job–tag with tab is placed upon each energy isolation device after de-energization. The key(s) and removed tabs(s) are then placed into a lockbox. Each authorized employee assigned to the job then affixes his/her personal lock or tag to the lockbox. As a member of a group, each assigned authorized employee verifies that all hazardous energy has been rendered safe. The lockout/tagout device cannot be removed or the energy isolating device turned on until the appropriate key or tab is matched to its lock or tag.

Failure to comply with this procedure will result in disciplinary action up to and including Termination

SEQUENCE OF LOCKOUT

(1) Notify all affected employees that servicing, or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

Name(s)/Job Title(s) of affected employees and how to notify.

(2) The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.

Type(s) and magnitude(s) of energy, its hazards, and the methods to control the energy.

(3) If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).

Type(s) and location(s) of machine or equipment operating controls.

(4) Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

Type(s) and location(s) of energy isolating devices.

(5) Lock out the energy isolating device(s) with assigned individual lock(s).

(6) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

Type(s) of stored energy--methods to dissipate or restrain.

(7) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

Caution: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

Method of verifying the isolation of the equipment.

(8) The machine or equipment is now locked out.

RESTORING EQUIPMENT TO SERVICE- When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken:

(1) Check the machine or equipment and the immediate area around the machine or equipment to ensure that non-essential items have been removed and that the machine or equipment components are operationally intact.

(2) Check the work area to ensure that all employees have been safely positioned or removed from the area.

(3) Verify that the controls are in neutral.

(4) Remove the lockout devices and reenergize the machine or equipment.

Note: The removal of some forms of blocking may require reenergization of the machine before safe removal.

(5) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Confined Space Entry Program

Policy

The purpose of this program is to inform all persons, including employees that SEI Solutions is complying with the OSHA Confined Space Standard, Title 29 Code of Federal Regulations 1910.146. We have determined that our workplace needs written procedures for the evaluation of confined spaces, and when permit-required spaces are identified, we have developed and implemented a permit-required confined space entry program. This program applies to all operations at SEI Solutions where employees enter a permit-required confined space as part of their job requirement.

The Health and Safety Manager has overall responsibility for coordinating and developing safety and health programs in this company. The Health & Safety Manager is the person having overall responsibility for the Permit-Required Confined Space Program. The Health and Safety Manager will review and update the program, as necessary.

Copies of the written program may be obtained from the Health & Safety Manager's office.

Under this program, we identify permit-required spaces and provide training for our employees according to their responsibilities in the permit space. These employees receive instructions for safe entry into our specific type of confined spaces, including testing and monitoring, appropriate personal protective equipment, rescue procedures, and attendant responsibilities.

Under this program, we identify procedures to declassify permit-required spaces to non permit-required spaces. These procedures identify what assessments must be performed and who must authorize the declassification of a permit-required confined space.

This program is designed to ensure that safe work practices are utilized during all activities regarding the permit and non-permit spaces to prevent personal injuries and illnesses that could occur.

If, after reading this program, you find that improvements can be made, please contact the Health & Safety Manager. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a safe and effective permit-required confined space entry program is an important component of our overall safety plan. We strive for clear understanding, safe work practices, and involvement in the program from every level of the company.

Hazard Evaluation

To determine if there are permit-required confined spaces at the SEI Solutions facility, The Health & Safety Manager has conducted a hazard evaluation of our facility. This evaluation has provided us with the information necessary to identify the existence and location of permit-required confined spaces in our facility that must be covered by the Permit-Required Confined Space Entry Program. No Confined Spaces were identified at SEI Solutions's facility.

Preventing Unauthorized Entry

To provide a safe work environment and to prevent exposed employees from accidentally entering a permit space, we will post danger signs to inform all employees of the existence, location, and danger posed by permit spaces at the SEI Solutions's facility if any are identified due to a change in the facility**.** All of the customer job-sites SEI Solutions works at are required to label their Confined Spaces.

Safe Permit Space Entry Procedures

The Entry Supervisor is responsible for authorizing entry and issuing entry permits for work in permit spaces. The file of permits and related documents are kept in Health & Safety Manager's office. The procedures we follow for preparing, issuing, and canceling entry permits includes the following elements:

Permit System

1. Before entry is authorized, the Company shall document the completion of measures required by paragraph (d)(3) of this section by preparing an entry permit.

2. Before entry begins, the entry supervisor identified on the permit shall sign the entry permit to authorize entry.

3. The completed permit shall be made available at the time of entry to all authorized entrants or their authorized representatives, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.

4. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit in accordance with paragraph (f)(2) of this section.

5. The entry supervisor shall terminate entry and cancel the entry permit when:

a. The entry operations covered by the entry permit have been completed; or

b. A condition that is not allowed under the entry permit arises in or near the permit space.

c. Any customer policy requires the cancellation of a permit because of a specific condition.

6. The Company shall retain each canceled entry permit for at least 1 year to facilitate the review of the permit-required confined space program required by paragraph (d)(14) of this section. Any problems encountered during an entry operation shall be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

Entry Permit

The entry permit that documents compliance with this section and authorizes entry to a permit space shall identify:

1. The permit space to be entered;

2. The purpose of the entry;

3. The date and the authorized duration of the entry permit;

4. The authorized entrants within the permit space;

5. The personnel, by name, currently serving as attendants;

6. The individual, by name, currently serving as entry supervisor, with a space for the signature or initials of the entry supervisor who originally authorized entry;

7. The hazards of the permit space to be entered;

8. The measures used to isolate the permit space and to eliminate or control permit space hazards before entry;

   NOTE: Those measures can include the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.

9. The acceptable entry conditions;

10. The results of initial and periodic tests performed under paragraph (d)(5) of this section, accompanied by the names or initials of the testers and by an indication of when the tests were performed;

11. The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services;

12. The communication procedures used by authorized entrants and attendants to maintain contact during the entry;

13. Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with this section;

14. Any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety; and

15. Any additional permits, such as for hot work, that have been issued to authorize work in the permit space.

Pre-Entry Evaluation

To ensure the safety and health of our employees, before allowing authorized workers to enter a permit space, we evaluate conditions in that space to determine if the conditions are safe for entry. Any employee who enters the space, or that employee's authorized representative, has the opportunity to observe the pre-entry and any subsequent testing. The authorized entrant or that employee's representative also has the option of requesting a reevaluation of the space if they feel that the evaluation was not adequate.

Our company follows the procedures to evaluate each permit space before entry according to 1910.146(c)(5)(ii)(C). This includes testing the internal atmosphere with a calibrated direct-reading instrument for oxygen content, flammable gases and vapors, and potential toxic air contaminants. We also periodically test the atmosphere of the space to ensure that the continuous ventilation is preventing the accumulation of a hazardous atmosphere.

Certification

According to 1910.146(c)(5)(ii)(H), our company verifies that the space is safe for entry and that the pre-entry measures required by 1910.146(c)(5)(ii) have been taken, through a written certification that contains the date, location of the space, and signature of the person providing the certification, (Confined Space Permit). At our company, the project Supervisor is responsible for verifying these procedures. The certification is made before entry and is available to each employee entering the space.

Equipment

To ensure the safety and health of our employees, SEI Solutions provides appropriate equipment to all employees who work in or near our permit spaces. According to 1910.146(k)(3)(i), each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which SEI Solutions can establish presents a profile small enough for the successful removal of the entrant. Wristlets may be used instead of the chest or full body harness if SEI Solutions can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

We maintain all equipment in excellent working condition, train the entrants in the correct usage of this equipment, and ensure that all equipment, including that used for personal protection, is used properly.

Duties & Responsibilities

Authorized Entrants

Those persons who have completed the training and are authorized to enter our permit spaces (authorized entrants) are assigned specific duties and responsibilities that they must perform when they work in the permit space.
The Company trains each authorized entrant so that they have an understanding, knowledge, and the skills necessary to safely perform their duties and responsibilities.

Their duties and responsibilities include:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Properly use equipment as required by paragraph (d)(4) of this section;

3. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required by paragraph (i)(6) of this section;

4. Alert the attendant whenever:

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

b. The entrant detects a prohibited condition; and

c. Exit from the permit space as quickly as possible whenever:

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

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

   iii. The entrant detects a prohibited condition, or

   iv. An evacuation alarm is activated.

Attendants

Persons who have been designated as permit space attendants are assigned specific duties and responsibilities that they must perform in permit space job duties. The Company trains each attendant so that they have an understanding, knowledge, and the skills necessary to safely perform their duties and responsibilities.

Their duties and responsibilities include:

1. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

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

3. Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants under paragraph (f)(4) of this section accurately identifies who is in the permit space;

   NOTE: Attendants are only allowed to monitor one Confined Space at a time.

4. Remains outside the permit space during entry operations until relieved by another attendant;

   NOTE: When the Company's permit entry program allows attendant entry for rescue, attendants may enter a permit space to attempt a rescue if they have been trained and equipped for rescue operations as required by paragraph (k)(1) of this section and if they have been relieved as required by paragraph (i)(4) of this section.

5. Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space under paragraph (i)(6) of this section;

6. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions;

    a. If the attendant detects a prohibited condition;

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

    c. If the attendant detects a situation outside the space that could endanger the authorized entrants including but not limited to pedestrians, vehicles, mobile equipment; or

    d. If the attendant cannot effectively and safely perform all the duties required under paragraph (i) of this section;

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

8. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

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

    b. Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and

    c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;

9. Performs non-entry rescues as specified by the Company's rescue procedure; and

10. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Entry Supervisors

Those persons who have completed the training and have been designated as permit space entry supervisors are assigned specific duties and responsibilities that they must perform in permit space job duties. The Company trains each entry supervisor so that they have an understanding, knowledge, and the skills necessary to safely perform their duties and responsibilities.

Their duties and responsibilities include:

1. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;

3. Terminates the entry and cancels the permit as required by paragraph (e)(5) of this section;

4. Verifies that rescue services are available and that the means for summoning them are operable;

5. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and

6. Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills.

Training Program

Every employee at SEI Solutions who faces the risk of confined space entry is provided with training so that each designated employee acquires the understanding, knowledge and skills necessary for the safe performance of the duties assigned to them. The Health & Safety Manager conducts our permit-required confined space training. All training related materials, documents, and signed certificates are kept in Health & Safety Manager's office.

We use the following criteria to determine which employees must receive permit-required confined space training:

- The area they work in;
- Whether or not any confined spaces exist in that area; and/or
- They will be required to enter a confined space or assist in confined space entry.

New employees are always trained before their initial assignment of duties. When changes occur in permit-required confined space areas of our company, we provide training. If we have reason to believe that an employee has deviated from a previously trained upon procedure or that their knowledge seems inadequate, we provide training.

Upon successful completion of SEI Solutions permit-required confined space training program, each participant receives a certificate which they sign verifying that they understand the material presented, and that they will follow all company policies and procedures regarding permit space entry.

Refresher training is conducted on an annual basis for all employees involved in Permit-Required Confined Space Entry.

Rescue and Emergency Services

Depending on the specific hazards and location of the project SEI Solutions may use one of the following: customer emergency rescue team, qualified contracted rescue teams, the local emergency response and rescue teams, or in-house designated rescue personnel.
SEI Solutions may utilize designated in-house rescue personnel to perform rescue services in the event of a permit space emergency. This group of employees has been trained, at a minimum, to:

- Perform the assigned rescue duties;

- Correctly use personal protective equipment (PPE) required for the job;

- Establish proficiency as an authorized entrant, as provided by 1910.146(g) and (h); and

- Perform basic first-aid and cardiopulmonary resuscitation (CPR).

SEI Solutions also ensures that at least one member of the rescue team holds a current certification in first-aid and CPR, and that any in-house rescue personnel practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces will, with respect to opening size,

configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

Reclassifying Permit-Required Confined Spaces to Non-Permit Confined Space

A space classified as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

If at a customer's facility the confined space must first be declassified by the customer through their procedures which evaluates and confirms that the permit space poses no actual or potential atmospheric hazards and that all hazards within the space are eliminated.

The SEI Solutions site supervisor must then complete the SEI Solutions Confined Space Hazard Assessment form. The form must confirm that the space poses no actual or potential atmospheric hazards and that all the hazards within the space are eliminated without entry into the space, the permit space may then be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated. Per 1910.146(c)(7)(i)

If it is necessary to enter the permit space to eliminate hazards such entry shall be performed under the SEI Solutions Permit-Required Confined Space Entry Program. If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated. Per 1910.146(c)(7)(ii)

The SEI Solutions site supervisor shall document the basis for determining that all hazards in a permit space have been eliminated, through the SEI Solutions Confined Space Hazard Assessment form. This form contains the date, the location of the space, and the signature of the site supervisor making the determination. The form shall be made available to each employee entering the space or to that authorized representative. 1910.146(c)(7)(iii)

The completed Confined Space Hazard Assessment form must then be approved by an SEI Solutions Health & Safety Manager or the project manager in charge of the account. This approval can be verbal but must be noted this way on the Confined Space Hazard Assessment form.

If hazards arise within the permit space that has been declassified to a non-permit space, each employee in the space shall exit the space immediately. The space shall then be reevaluated to determine whether it must be reclassified as a permit-required confine space.

Multiple Company Entry Procedures

When outside Company's/contractors enter our facility to perform work in permit spaces, we coordinate entry and work operations following these procedures:

- 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 requirements of this section;

- Apprise the contractor of the elements, including the hazards identified and the host Company's experience with the space, that make the space in question a permit space;

- Apprise the contractor of any precautions or procedures that the host Company has implemented for the protection of employees in or near permit spaces where contractor personnel will be working;

- Coordinate entry operations with the contractor, when both host Company personnel and contractor personnel will be working in or near permit spaces, as required by paragraph (d)(11) of this section; and

- 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 Company's, each contractor who is retained to perform permit space entry operations shall:

    - Obtain any available information regarding permit space hazards and entry operations from the host Company;

    - Coordinate entry operations with the host Company, when both host Company personnel and contractor personnel will be working in or near permit spaces, as required by paragraph (d)(11) of this section; and

    - Inform the host Company 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.

Review-Procedures

To ensure that all employees participating in entry operations are protected from permit space hazards, SEI Solutions reviews the Permit-Required Confined Space Entry Program on a regular basis. We use the retained canceled permits from the past 12 months within one year after each entry and revise the program as necessary. SEI Solutions performs a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review will be performed.

Enforcement

Constant awareness of and respect for permit-required confined space entry hazards, and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this permit entry program.

Appendices

Confined Space Hazard Assessment Form

Entry Permit (Appendix A)

Atmospheric Test Continued (Appendix B)

Authorized Entrants Continued (Appendix C)

SEI Solutions

Confined Space Hazard Assessment

Confined Space ID: _____ Date: _____

Date of Last Assessment: _____ Person making assessment:_____
(If applicable)

Location of Confined Space: _____

A Hazard Assessment Form Must Be Completed for All Confined Spaces

Confined Space must meet all the below criteria

1. Is large enough or so configured that an employee can bodily enter and perform work
2. Has limited or restricted means for entry or exit
3. Is not designed for continuous employee occupancy

	Non-Permit Confined Space must meet all the below criteria		**Permit Required Confined Space** must be a confined space and meet any one of the below criteria
	The permit space poses no actual or potential atmospheric hazards and		Contains or has a potential to contain a hazardous atmosphere... OR
	All hazards within the space have been eliminated without entry into the space and		Contains a material that has the potential for engulfing an entrant... OR
	All non-atmospheric hazards are eliminated and remain eliminated and		Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly covering walls or by a floor which slopes downward and tapers to a smaller cross-section... OR
	The customer at which the confined space in question is located has reclassified the confined space as non-permit		Contains any other recognized serious safety or health hazard

Authorized Entry Points

	Top		**Side**		**Bottom**

Hazards	**Source/Type**	**Quantity & Quality** (1)	**Severity** (Rate 1 to 5)	**Hazard Abatement Method**
Explosive Atmosphere		___ LEL(2)		
Combustible Material				
Electrical Circuits				
Toxic Gases		____ PEL		
Toxic Material				
Thermal Hazards		____ ^{0}F		
Machinery				
Slip / Fall Hazards				
Engulfment Hazards				
Entrapment Hazards				

Personal Protective Equipment Required

Check	**Type**	Check	**Type**	Check	**Type**
	Gloves		Hearing Protection		Hard Hat
	Coveralls		Safety Glasses		Goggles
	Air Supplied Respirator: SCBA / Line Fed		Air Purifying Respirator (3)		Acid / Org / DMF / N / R / P

Ventilation Requirements					
	Space Volume in cubic feet				
	Natural circulation - no atmospheric hazards in the space - additional ventilation may be required for worker comfort, hot work, grinding or other operations that would produce airborne fumes, mist or dust. Entry Supervisor must assess additional ventilation requirements based on tasks to be performed in the space prior to time of entry				
	Mechanical ventilation required for venting hazardous atmospheric contaminants				
Supply		**Exhaust**		**Local** (4)	
Volume	_____CU/FT per Min	Volume	_____CU/FT per Min	Volume	_____CU/FT per Min
Point (5)		Point		Point	

Ventilation Formulas & Requirements		
20 Air Changes Per Hour (ACH) required for duration of entry 20 ACH = Space volume X 20	**Adequate Blower Capacity (ABC)** ABC = Space Volume x 20 ACH / 60 Minutes	**Initial Purge Time** 7.5 x Space volume / Effective Blower Capacity

Required Rescue & Safety Equipment (check if required)			
	Life Line		Man Winch
	Body Harness		Fall Arrest Unit
	Floor level opening barrier		Emergency Retrieval Line
	Tripod		Blower
	Class I, Division I, Group D Electrical Equipment (6)		Vent Saddle
	Powered Communication		Vent Trunks
	Portable Lighting		Ladder
	Atmospheric Monitor Make & Model		Emergency Escape Respirators

Acceptable Entry Conditions			
	Confined Space Entry permit posted		Lockout electrical components in space
	Oxygen 19.5 – 23.5%		Lockout mechanical components in space
	Lower Explosive Level l0%		Lockout all pipes to and from space
	Toxic fumes/vapors less than PEL		Forced Mechanical Ventilation Established & Maintained
	No engulfing material in space		No hazardous chemicals or material
	Continuous Air Monitoring		Rescue Team Available (7)
	Space Drained – Flushed		Pre-entry brief completed
	Max Internal temperature _____ ^{0}F		Minimum Internal Temperature _____ ^{0} F
	Training verified for supervisor, entrants and attendants		Training verified current for all Rescue Team Members

Communication Procedures - between attendant & entrants

____ **Wireless Radio** ___ **Line Radios** ___ **Verbal from Access**

Rescue Procedures

____ **Self Rescue** ___ **Non-entry Rescue** ____ **Rescue Team Entry**

Notes

Foot Notes

(1) Quantity & Quality - List volume or amount of material. For gases/dust/fumes, list the concentrations. For electrical hazards, list voltage

(2) LEL - Lower Explosion Level - lowest % of concentration in which an explosion could occur

(3) Air Purifying Respirator - select type of filter or cartridge required - Acid Gas, Organic Vapor, (N) Not Oil Resistant, (R) Oil Resistant, (P) Oil Proof, (DMF) Dust- Mist-Fume

(4) Local Ventilation - provide for worker comfort or for drawing away fumes or airborne particles caused by expected work in the space

(5) Point - list location for entry of supply, local or exhaust ventilation

(6) Class I, Division I, Group D - refers to hazardous locations that require explosion proof electrical equipment

(7) Rescue team - required to be at access point for entries into spaces with IDLH (immediately dangerous to life and health) atmospheric condition. For all other entries, rescue team must be readily available

_____ _____

Site Supervisor Date

For Non-Permit Confined Space Entry this assessment form must be completed and approved, (Verbally or with a Signature), by an SEI Solutions Health & Safety Manager or the Project Manager in charge of the jobsite.

Approved by: _____ Date: _____

Signature /Time or verbal approval: _____

Confine Space Permit-See Appendix A

Atmospheric Test Continued Page-See Appendix B

Authorized Entrants Continued Page-See Appendix C

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CONFINED SPACE PERMIT

PERMIT MUST REMAIN ON JOB SITE UNTIL WORK IS COMPLETED

Plant/Facility Name: _____ Area/Department: _____ Date: _____

Purpose of Entry: _____ Permit/Job Start Time: _____ Permit/Job End Time: _____

Emergency Phone Number: _____ Muster Point Location: _____

Hazard Identification and Hazard Elimination Requirements Completed												
Gas Hazards	YES NA	Space Ventilation Required	YES NA	SDS Reviewed	YES NA	Gas Monitor Make:		Model #:				
Chemical Hazards	YES NA	Supplied Air Required	YES NA	Hot Work Permit	YES NA	Calibration Date:		Serial #:				
Lockout/Tagout	YES NA	Extreme Temp. Hazards	YES NA	Warning Signs Posted	YES NA	INTIAL TEST:						
Purging Required	YES NA	Lifelines / Tag line	YES NA	Engulfment Hazards	YES NA	NAME:						
Communication Established	YES NA	Proper PPE	YES NA	Site / Special Training	YES NA	TIME:						
Adjacent Work	YES NA	Harness / Wristlets	YES NA	Stored Energy Released	YES NA	O2	LEL	CO	H2S			

NOTES:

Atmospheric Test Results (Taken at least every 2 hours):

Gas Tested	Levels	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Oxygen	19.5% - 23.5%								
Combustible Gas	<10% LEL								
Carbon Monoxide	0-5 ppm								
Hydrogen Sulfide	0-10 ppm								
Other									

CONFINED SPACE ATTENDANT:	Time: **IN**	Time: **OUT**	Time: **IN**	Time: **OUT**	CONFINED SPACE ATTENDANT:	Time: **IN**	Time: **OUT**	Time: **IN**	Time: **OUT**

Authorized Entrants: All Entrants MUST be logged IN and OUT of space Out by Attendant:

Entrant Name:	In	Out	In	Out	In	Out	In	Out	All Out Initials

Entry Supervisor Approval Authorizing Above Permit:

Name (Printed): _____ Signature: _____ Number_____

Entry Supervisor Shall Review and Authorize Completion of the Permit:

Closing of the permit requires Entry Supervisor Signature

Name (Printed): _____ Signature: _____

Completion Date: _____ Completion Time: _____

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CONFINED SPACE PERMIT

Atmospheric Test Results (Cont.)

Facility Name: ______________________________ Area/Department: ________________________ Date: _______________

Purpose of Entry: ________________________________ Permit/Job Start Time: ______________ Permit/Job End Time: ______________

Gas Tested	Levels	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Oxygen	19.5% - 23.5%								
Combustible Gas	<10% LEL								
Carbon Monoxide	0-5 ppm								
Hydrogen Sulfide	0-10 ppm								
Other									

Gas Tested	Levels	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Oxygen	19.5% - 23.5%								
Combustible Gas	<10% LEL								
Carbon Monoxide	0-5 ppm								
Hydrogen Sulfide	0-10 ppm								
Other									

Gas Tested	Levels	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Oxygen	19.5% - 23.5%								
Combustible Gas	<10% LEL								
Carbon Monoxide	0-5 ppm								
Hydrogen Sulfide	0-10 ppm								
Other									

Gas Tested	Levels	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Oxygen	19.5% - 23.5%								
Combustible Gas	<10% LEL								
Carbon Monoxide	0-5 ppm								
Hydrogen Sulfide	0-10 ppm								
Other									

Job Number: ____________________ **Confined Space Attendant:** ____________________________ **Page**_______ **of** _______

Confined Space Entry Log:

Authorized Entrants: (Cont.)

Plant/Facility Name: _____Area/Department: _____ Date: _____

Purpose of Entry: _____Permit/Job Start Time: _____Permit/Job End Time: _____

This page to be used IF spaces on permit become completed and you need to document additional entry/exit activity.										
Entrant name	Time In	Time Out	Time IN	Time Out	Time IN	Time Out	Time Out	Time Out	Time IN	Time Out

SEI Solutions LLC
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Hazard Communication Program

This Hazard Communication Program has been developed in accordance with the Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.1200. It provides detailed safety guidelines and instructions for receipt, use and storage of chemicals at our facility by employees and contractors.

Duties

The Health and Safety Manager has overall responsibility for coordinating safety and health programs in this company. He/she is the person having overall responsibility for the Hazard Communication Program. The Health and Safety Manager will review and update the program, as necessary. Copies of the written program may be obtained in the Safety Manager's office.

General Program Information

This written Hazard Communication Plan (HAZCOM) has been developed based on OSHA's Hazard Communication Standard and consists of the following elements:

- Identification of Hazardous Materials
- Product Warning Labels
- Safety Data Sheets (SDS)
- Written Hazard Communication Program
- Effective Employee Training

Some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and/or property damage, persons who handle chemicals in any area of the Company must understand the hazardous properties of the chemicals. Before using a specific chemical, safe handling methods and health hazards must always be reviewed. Supervisors are responsible for ensuring that the equipment needed to work safely with chemicals is accessible and maintained for all employees on all shifts and a list of the hazardous chemicals known to be present is accessible. These chemicals should be identified and reference the appropriate Safety Data Sheet.

Employee Training

Orientation Training

All new employees shall receive safety orientation training covering the elements of the HAZCOM and Right to Know Program. This training will consist of general training covering:

1. Location and availability of the written Hazard Communication Program
2. Location and availability of the List of Chemicals used in the workplace
3. Methods and observation used to detect the presence or release of a hazardous chemical in the workplace.
4. The specific physical and health hazard of all chemicals in the workplace
5. Specific control measures for protection from physical or health hazards
6. Explanation of the chemical labeling system
7. Location and use of SDS sheets

This training will be conducted in a classroom setting with the use of PowerPoint presentations, verbal discussions, videos, and verbal and written exams to verify understanding. All employees must speak and understand English.

Job Specific Training

Employees will receive site specific training from the customer's facility before the start of any work. They also will receive on the job training from their supervisor. This training will cover

the proper use, inspection and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

Annual Refresher Training

Annual Hazard Communication refresher training will be conducted as part of the company's continuing safety training program. This training will be conducted in a classroom setting with the use of PowerPoint presentations, verbal discussions, videos, and verbal and written exams to verify understanding.

Immediate On-the-Spot Training

This training will be conducted by supervisors for any employee that requests additional information or exhibits a lack of understanding of the safety requirements. If necessary the Safety Manager will be present to conduct this training.

Non-Routine Tasks

Non-routine tasks are defined as working on, near, or with unlabeled piping, unlabeled containers of an unknown substance, confined space entry where a hazardous substance may be present and/or a one-time task using a hazardous substance differently than intended (example: using a solvent to remove stains from tile floors).

Steps for Non-Routine Tasks

Step 1: Hazard Determination
Step 2: Determine Precautions
Step 3: Specific Training & Documentation
Step 4: Perform Task

All non-routine tasks will be evaluated by the Supervisor and Safety Manager before the task commences, to determine all hazards present. This determination will be conducted with quantitative/qualitative analysis (air sampling, substance identification/analysis, etc., as applicable).

Once the hazard determination is made, the Department Supervisor and Safety Department will determine the necessary precautions needed to either remove the hazard, change to a non-hazard, or protect from the hazard (use of personal protective equipment) to safeguard the Employees present. In addition, the Department Supervisor or Safety Department will provide specific safety training for Employees present or affected and will document the training.

Off-Site Use or Transportation of Chemicals

An SDS will be provided to employees for each chemical and each occurrence of use or transport away from the company facilities. All State and Federal DOT Regulations will be followed including use of certified containers, labeling & marking, securing of containers and employee training.

General Chemical Safety

Assume All Chemicals Are Hazardous

The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects.

General Safety Rules

- Read and understand the Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Carefully label every container with the identity of its contents and appropriate hazard warnings.
- Store incompatible chemicals in separate areas.
- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

Task Evaluation

Each task that requires the use of chemicals should be evaluated to determine the potential hazards associated with the work. This hazard evaluation must include the chemical or combination of chemicals that will be used in the work, as well as other materials that will be used near the work. If a malfunction during the operation has the potential to cause serious injury or property damage, a Safe Operational Procedure (SOP) should be prepared and followed. Operations must be planned to minimize the generation of hazardous wastes.

Chemical Storage

The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by accidental mixing. Explosives should be stored separately outdoors. Use either distance or barriers (e.g., trays) to isolate chemicals into the following groups:

- Flammable Liquids: store in approved flammable storage lockers.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other material
- Other liquids: ensure other liquids are not incompatible with any other chemical in the same storage location.
- Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake.

Chemicals will not be stored in the same refrigerator used for food storage. Refrigerators used for storing chemicals must be appropriately identified by a label on the door.

Container Labels

It is extremely important that all containers of chemicals are properly labeled. This includes every type of container from a 5000-gallon storage tank to a spray bottle of degreaser. The following requirements apply:

- All containers will have the appropriate label, tag or marking prominently displayed that indicates the identity, safety and health hazards.

- Portable containers which contain a small amount of chemical need not be labeled if they are used immediately that shift, but must be under the strict control of the employee using the product.

- All warning labels, tags, etc., must be maintained in a legible condition and not be defaced. Facility weekly supervisor inspections will check for compliance of this rule.

Incoming chemicals are to be checked for proper labeling.

Emergencies and Spills

In case of an emergency, implement the proper Emergency Action & Response Plan.

1. Evacuate people from the area.
2. Isolate the area.
3. If the material is flammable, turn off ignition and heat sources.
4. Only personnel specifically trained in emergency response are permitted to participate in chemical emergency procedures beyond those required to evacuate the area.
5. Call for Emergency Response Team assistance if required.

Housekeeping

Maintain the smallest possible inventory of chemicals to meet immediate needs.
Periodically review stock of chemicals on hand.

Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from accidental spills.

Rinse emptied bottles that contain acids or inflammable solvents before disposal. Recycle unused laboratory chemicals wherever possible.

DO NOT Place hazardous chemicals in salvage or garbage receptacles.
DO NOT Pour chemicals onto the ground.
DO NOT Dispose of chemicals through the storm drain system.
DO NOT Dispose of highly toxic, malodorous chemicals down sinks or sewer drains.

Contractors

All outside contractors working inside Company Facilities are required to follow the requirements of this program. The Company will provide Contractors information concerning:

- Location of SDS
- Precautions to be taken to protect contractor employees
- Potential exposure to hazardous substances
- Chemicals used in or stored in areas where they will be working
- Location and availability of Safety Data Sheets
- Recommended Personal Protective Equipment
- Labeling system for chemicals

Multi work sites

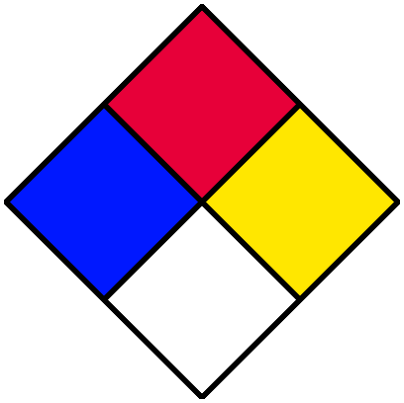
All multi work sites are required to follow the requirements of this program. The following information will be reviewed on the Job Safety Analysis prior to the start of any work on a jobsite:

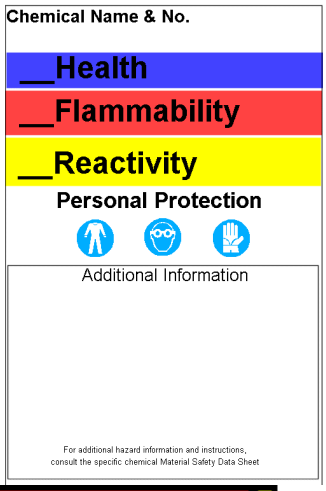
- Location of SDS
- Precautions to be taken to protect employees
- Potential exposure to hazardous substances
- Chemicals used in or stored in areas where they will be working

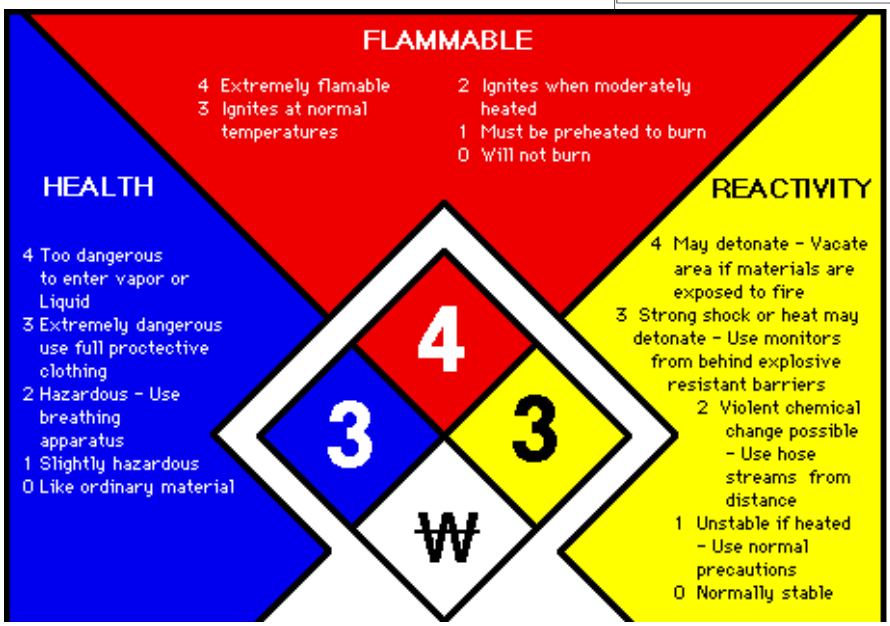
- Location and availability of Safety Data Sheets
- Recommended Personal Protective Equipment
- Labeling system for chemicals

The program shall be made available, upon request, to employees, their designated representatives. Where employees must travel between work places during a work shift (multi work sites), the written program may be kept at a primary job site. If there is no primary, then the program should be sent with employees.

Uniform Labeling Systems







Definitions

Chemical: any element, chemical compound or mixture of elements and/or compounds.

Combustible liquid: means any liquid having a flash point at or above 100 deg. F (37.8 deg. C), but below 200 deg. F (93.3 deg. C), except any mixture having components with flash points of 200 deg. F (93.3 deg. C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

Compressed gas: any compound that exhibits:
A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 deg. F
A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 deg. F. regardless of the pressure at 70 deg. F.
A liquid having a vapor pressure exceeding 40 psi at 100 deg. F.

Container: any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Employee: a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

Employer: a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

Explosive: a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Exposure or exposed: an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. Subjected in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

Flammable: a chemical that falls into one of the following categories:

"Aerosol, flammable" means an aerosol that yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

> "Gas, flammable" means a gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or

A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;

"Liquid, flammable" means any liquid having a flash point below 100 deg. F., except any mixture having components with flash points of 100 deg. F. or higher, the total of which make up 99 percent or more of the total volume of the mixture.

"Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flash point: the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.

Hazardous chemical: any chemical which is a physical hazard or a health hazard.

Hazard warning: any words, pictures, symbols, or combination appearing on a label or other appropriate form of warning which convey the specific physical and health hazard(s), including target organ effects, of the chemical(s) in the container(s). (See the definitions for "physical hazard" and "health hazard" to determine the hazards which must be covered.)

Health hazard: a chemical for which there is evidence that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

Identity: any chemical or common name which is indicated on the safety data sheet (SDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the SDS.

Immediate use: the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Label: any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

Mixture: any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

Oxidizer: means a chemical other than a blasting agent or explosive as defined in 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical hazard: a chemical that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Pyrophoric: a chemical that will ignite spontaneously in air at a temperature of 130 deg. F. or below.

Safety data sheet (SDS): written or printed material concerning a hazardous chemical which is prepared in accordance with OSHA Standard 1910.1200 requirements.

Specific chemical identity: the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

Unstable (reactive): a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Use: to package, handle, react, emit, extract, generate as a byproduct, or transfer.

Water-reactive: a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

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

Workplace: an establishment, job site, or project, at one geographical location containing one or more work areas.

SDS Information

Safety Data Sheets are provided by the chemical manufacturer to provide additional information concerning safe use of the product. Employers shall have a SDS for each chemical used with the exception of consumer products. Copies of the SDS for chemicals kept onsite may be obtained in the Safety Manager's office.
Each SDS provides:

- Common Name and Chemical Name of the material
- Name, address and phone number of the manufacturer
- Emergency phone numbers for immediate hazard information
- Date the SDS was last updated
- Listing of hazardous ingredients
- Chemical hazards of the material
- Information for identification of chemical and physical properties

Information Chemical Users must know

Fire and/or Explosion Information

- Material Flash Point, auto-ignition temperature, and upper/lower flammability limits
- Proper fire extinguishing agents to be used
- Firefighting techniques
- Any unusual fire or explosive hazards

Chemical Reaction Information

- Stability of Chemical
- Conditions and other materials which can cause reactions with the chemical
- Dangerous substances that can be produced when the chemical reacts

Control Measures

- Engineering Controls required for safe product use
- Personal protective equipment required for use of product
- Safe storage requirements and guidelines
- Safe handling procedures

Health Hazards

- Permissible Exposure Limit (PEL) and Threshold Limit Value (TLV)
- Acute or Chronic symptoms of exposure
- Main routes of entry into the body
- Medical conditions that can be made worse by exposure
- Cancer causing properties if any
- Emergency and First Aid treatments

Spill & Leak Procedures

- Clean up techniques
- Personal Protective Equipment to be used during cleanup
- Disposal of waste & cleanup material

Employee Use of SDS

For SDS use to be effective, employees must:

- Know the location of the SDS
- Understand the major points for each chemical
- Check SDS when more information is needed, or questions arise
- Be able to quickly locate the emergency information on the SDS
- Follow the safety practices provided on the SDS

Responsibilities

Management

- Ensure compliance with this program
- Conduct immediate corrective action for deficiencies found in the program
- Maintain an effective Hazard Communication training program
- Make this plan available to employees or their designated representative
- Shipping & Receiving Manager
- Ensure all received containers are properly labeled and that labels are not removed or defaced
- Ensure all shipped containers are properly labeled
- Ensure shipping department employees are properly trained in spill response
- Ensure received Safety Data Sheets (SDS) are properly distributed

Safety Manager

- Maintain a list of hazardous chemicals using the identity that is referenced on the SDS
- Monitor the effectiveness of the program
- Conduct annual audit of the program
- Monitor employee training to ensure effectiveness
- Keep management informed of necessary changes
- Ensure SDSs are available as required
- Monitor facility for proper use, storage and labeling of chemicals
- Ensure SDS are available for emergency medical personnel when treating exposed employees
- Provide information, as requested, concerning health effects and exposure symptoms listed on SDSs

Supervisors

- Comply with all specific requirements of the program
- Provide specific chemical safety training for assigned employees
- Ensure chemicals are properly used stored & labeled
- Ensure only the minimum amount necessary is kept at workstations

- Ensure up to date SDS are readily accessible to all employees on all shifts

Employees

- Comply with chemical safety requirements of this program
- Report any problems with storage or use of chemicals
- Immediately report spills of suspected spills of chemicals
- Use only those chemicals for which they have been trained
- Use chemicals only for specific assigned tasks in the proper manner

Contractors

- Comply will all aspects of this program
- Coordinate information with the Safety Manager
- Ensure Contractor employees are properly trained
- Notify the Safety Manager before bringing any chemicals into company property or facilities
- Monitor and ensure proper storage and use of chemicals by Contractor employees.

Fall Protection Plan

Policy:

It is the policy of SEI Solutions to take all practical measures possible to prevent employees from being injured by falls from heights. The Company will take all necessary steps to eliminate, prevent, and control fall hazards. The Company 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 4 feet and more. OSHA Standards state 6 feet or more. However, our Company requires protection at 4 feet or 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 Manager/foreman on each job site will be responsible for identifying fall hazards on their job site. The Manager/foreman will evaluate each situation or work procedure where employees may be exposed to a fall of 4 feet or more. The Manager/foreman 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 were fall protection will be required. This listing is by no means complete, and there are many other situations where a fall of 4 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.

- Holes

Personal fall arrest systems, covers, or guardrail systems shall be erected around holes (including skylights) that are more than 4 feet above lower levels.

Examples of Situations Requiring Fall Protection: (continued)

- Leading Edges

  Each employee who is constructing a leading edge 4 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 4 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 4 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 4 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 4 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 walking/working surface on which they are working shall be protected by a guardrail system, safety net system, or personal fall arrest system.

Examples of Situations Requiring Fall Protection: (continued)

- Precast Concrete Erection and Residential Construction

  Each employee who is 4 feet or more above lower levels while erecting precast concrete members and related operations such as grouting of precast concrete members and each employee engaged in residential construction, shall be protected by guardrail systems, safety net systems, or personal fall arrest systems.

- Ramps, Runways, and Other Walkways

  Each employee using ramps, runways, and other walkways shall be protected from falling 4 feet or more by guardrail systems.

- Low-slope Roofs

  Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 4 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 4 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.

- Controlled Access Zones (continued)

  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 are 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.

Fall Protection Systems:

When there is a potential fall of 4 feet or more, the Company will utilize one or more of the following means of providing protection, all of which will meet the requirements of applicable ANSI, ASTM, or OSHA requirements:

- 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 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 200pound 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 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.

- Guardrail Systems

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 4feet nor contact any lower level
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet
- 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 with suspension trauma prevention straps 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.

Rescue

SEI Solutions will ensure prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.

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 Company shall implement a safety monitoring system. The Company 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 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 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:

SEI Solutions will provide a training for each employee who might be exposed to fall hazards. Training shall enable each employee to recognize the hazards of falling & shall train each employee in the procedures to follow to minimize these hazards.
SEI Solutions will have written certification records showing the following:

1) Who was trained, when, dates of training
2) Signature of person providing training & date employer determined training was deemed adequate.

SEI Solutions will provide re-training when the following are noted:

1) Deficiencies in training.
2) Work place changes.
3) Fall protection systems or equipment changes that render previous training obsolete.

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.

Accidents:

All accidents and serious incidents (near accidents) will be investigated, implementing changes to the fall protection plan as necessary.

Safety Harness Inspection Report

JOBSITE	Date	Inspector's Name

Harness Make/ Model	MFG.'S SERIAL NUMBER	HARNESS WEBBING OR LEATHER	ALL STITCHING	RIVETS & EYELETS	D-RINGS, BUCKLES & TONGUE	BODY PAD (IF APPL.)	LANYARDS	SAFETY LATCH / HOOK	CERTIFICATION OR DATA TAG

0 = YES - OK

X = NO - REPLACE

Ensure Harness is COLOR-CODED with the appropriate tape marker

FORWARD TO SAFETY DIRECTOR AT _____

Fire & Flammable Liquids Program

Fire Safety

Purpose:

The purpose of the Fire Safety Plan is to prevent potential injuries and deaths, and to protect the Company's property from damage or loss due to fire. This plan includes fire prevention, building exits, fire extinguishing, emergency evacuation, and employee training.

This plan will be reviewed with all new employees when they begin their job and with all employees when the plan is changed.

Fire Prevention:

Our first line of defense against fire is to prevent it in the first place. It is the responsibility of all employees to prevent fires. All employees will be appraised of the potential fire hazards in their work area and will be trained in safe work procedures and practices. Employees are expected to follow proper procedures to prevent fires and to notify their supervisor or other management personnel if they observe any condition that could lead to the ignition of a fire or could increase the spread of a fire.

The following are some general fire prevention practices and procedures that will be followed:

- All ignition sources (i.e., open flames, cutting torches, spark producing equipment, electric motors, heating equipment, etc.) will be controlled. All contact of ignition sources with combustible and flammable materials will be avoided. All employees will keep all combustible materials at least five feet from such ignition sources and all flammable liquids at least twenty feet away.

- Extensive use of electrical extension cords should be avoided. Any damaged or frayed electrical wiring, equipment cords, extension cords, etc. will be removed from service immediately and replaced or repaired.

- Any use of flammable liquids will be done in a manner that prevents spills, and prevents the flammable liquid or its vapor or spray from coming into contact with any ignition source. All flammable liquids will be stored in proper flammable liquid storage containers and kept in the proper storage cabinets.

- Housekeeping and storage practices are critical to preventing fires. Any combustible materials will be stored in neat stacks with adequate aisle space provided to prevent the easy spread of fire and to allow for access to extinguish any fire that may start. Trash, scrap, and other unnecessary combustibles must be cleaned up immediately and placed in proper disposal containers.

- Smoking is restricted to designated areas.

Company Fire Exits:

- Each area of the building/work site has at least two means of escape and are to be used in a fire emergency. The location of exits and the path of egress (escape) will be shown on maps (and posted throughout the building as necessary).

- Fire exit doors will not be blocked or locked during business hours in order to prevent their emergency use (when employees are within the building).

- Exit routes from the work site will be clear and free of obstructions. All exits are marked with signs designating exits from the premises.

Fire Extinguishers:

- Each area of the Company will have a full complement of the proper type of fire extinguisher for the fire hazards present. All fire extinguishers will be inspected annually by a fire protection equipment company and tagged with the date of inspection. If a fire extinguisher is used or discharged for any reason, it will be removed from service and replaced with another properly charged fire extinguisher while it is being recharged.

- Employees who are expected or anticipated to use fire extinguishers will be instructed on the hazards of fighting fires, how to properly operate the fire extinguishers available, and what procedures to follow in alerting others to the fire emergency. These employees will only attempt to extinguish small incipient fires. If a fire cannot be immediately and easily extinguished with a fire extinguisher, the employees will evacuate the building. They will not try to fight the fire! All employees who are not trained and designated to fight fires are to immediately evacuate the premises at the first sign of fire or initiation of the fire alarm and are prohibited from using an extinguisher and re-entering the premises.

Emergency Fire Evacuation:

If any employee discovers a fire or smoke, the employee will immediately pull the nearest fire alarm box. If there is time and it is safe to do so, the employee will contact a member of Management to report the fire. Management will then make an announcement over the public address system that all employees and customers are to evacuate the building. Management will then call 911 and report the fire to the fire department.

If a fire alarm sounds or a fire is otherwise announced, all employees (except those designated and trained to use fire extinguishers) are expected to immediately exit the premises by proceeding to the nearest exit in an orderly fashion. If the nearest exit is blocked by fire or smoke, the employees should proceed to an alternate exit. There should be no running, shouting, pushing, etc. A calm orderly evacuation is the safest for all concerned.

Emergency Fire Evacuation: (continued)

Upon exiting the building, all employees and personnel are to proceed to the designated meeting area(s) away from the building, so as not to hamper access by fire fighters, and in order to be accounted for. The designated meeting area(s) for our building is:

Outside in front of building

Supervisors and managers will account for all of their employees to ensure that no one is still in the building and unaccounted for.

Where needed, special procedures for helping physically impaired employees will be established. This will be done on a case by case basis when the employee is first hired or when the physical impairment first occurs.

Employee Training:

All new employees will receive fire prevention and emergency evacuation training when they are hired. All employees will also receive refresher training and a review of this plan on an annual basis.

The Company will hold fire drills and will include a practice evacuation of the building at least annually. These drills will be used to evaluate employee response and behavior and will help us determine where more training is needed.

Those employees who are designated and authorized to use fire extinguishers to fight small fires will receive training in the proper use of extinguishers, how to extinguish a fire, the hazards involved in fighting fires, when not to fight a fire, and when to evacuate the area.

The Safety and Health Manager administers the Company's fire prevention and life safety inspection programs. This includes reviewing all new building construction and renovations to ensure compliance with applicable state, local, and national fire and life safety standards.

Fire prevention measures propose to reduce the incidence of fires by eliminating opportunities for ignition of flammable materials.

Flammable and Combustible Materials:

Substitution-

Flammable liquids sometimes may be substituted by relatively safe materials 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 -

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.

1) 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.

2) Storage Inside Buildings.

Where approved storage cabinets or rooms are not provided, inside storage will comply with the following basic conditions:

a. The storage of any flammable or combustible liquid shall not physically obstruct a means of egress from the building or area.

b. Containers of flammable or combustible liquids will remain tightly sealed except when transferred, poured or applied. Remove only that portion of liquid in the storage container required to accomplish a particular job.

c. 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 liquids. The building will have 2-hour fire-rated exterior walls having no opening within 10 feet of such storage.

d. Flammable paints, oils, and varnishes in 1 or 5 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.

Ventilation -

Every inside storage room will be provided with a continuous mechanical exhaust ventilation system. To prevent the accumulation of vapors, the location of both the makeup and exhaust air openings will be arranged to provide, as far as practical, air movement directly to the exterior of the building and if ducts are used, they will not be used for any other purpose.

Elimination of Ignition Sources-

All nonessential ignition sources must be eliminated where flammable liquids are used or stored. The following is a list of some of the more common potential ignition sources:

• Open flames, such as cutting and welding torches, furnaces, matches, and heaters-these sources should be kept away from flammable liquids operations. Cutting or welding on flammable liquids equipment should not be performed unless the equipment has been properly emptied and purged with a neutral gas such as nitrogen.
• Chemical sources of ignition such as d.c. motors, switched, and circuit breakers-these sources should be eliminated where flammable liquids are handled or stored. Only approved explosion-proof devices should be used in these areas.
• Mechanical sparks-these sparks can be produced as a result of friction. Only nonsparking tools should be used in areas where flammable liquids are stored or handled.
• Static sparks-these sparks can be generated as a result of electron transfer between two contacting surfaces. The electrons can discharge in a small volume, raising the temperature to above the ignition temperature. Every effort should be made to eliminate the possibility of static sparks. Also proper bonding and grounding procedures must be followed when flammable liquids are transferred or transported.

Removal of Incompatibles -

Materials that can contribute to a flammable liquid fire should not be stored with flammable liquids. Examples are oxidizers and organic peroxides, which, on decomposition, can generate large amounts of oxygen.

Flammable Gases-

Generally, flammable gases pose the same type of fire hazards as flammable liquids and their vapors. Many of the safeguards for flammable liquids also apply to flammable gases, other properties such as toxicity, reactivity, and corrosivity also must be taken into account. Also, a gas that is flammable could produce toxic combustion products.

Fire Extinguishers:

A portable fire extinguisher is a “first aid” device and is very effective when used while the fire is small. The use of fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers must be installed in workplaces regardless of other fire fighting measures. The successful performance of a fire extinguisher in a fire situation largely depends on its proper selection, inspection, maintenance, and distribution.

Classification of Fires and Selection of Extinguishers-

Fires are classified into four general categories depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it.

1) Class A fires involve materials such as wood, paper, and cloth which produce glowing embers or char.

2) Class B fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur.

3) Class C fires involve fires in live electrical equipment or in materials near electrically powered equipment.

4) Class D fires involve combustible metals, such as magnesium, zirconium, potassium, and sodium.

5) Class K fires are kitchen fires that involve cooking oils.

Extinguishers will be selected according to the potential fire hazard, the construction and occupancy of facilities, hazard to be protected, and other factors pertinent to the situation.

Location and Marking of Extinguishers-

Extinguishers will be conspicuously located and readily accessible for immediate use in the event of fire. They will be located along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets will be used as extinguisher locations whenever possible.

Extinguishers will be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers and the arrows will be marked with the extinguisher classification.

Location and Marking of Extinguishers- (continued)

If extinguishers intended for different classes of fire are located together, they will be conspicuously marked to ensure that the proper class extinguisher selection is made at the

time of a fire. Extinguisher classification markings will be located on the front of the shell above or below the extinguisher nameplate. Markings will be of a size and form to be legible from a distance of 3 feet.

Condition of Fire Extinguishers-

Portable extinguishers will be maintained in a fully charged and operable condition. They will be kept in their designated locations at all times when not being used. When extinguishers are removed for maintenance or testing, a fully charged and operable replacement unit will be provided.

Mounting and Distribution of Extinguishers-

Extinguishers will be installed on hangers, brackets, in cabinets, or on shelves. Extinguishers having a gross weight not exceeding 40 pounds will be so installed that the top of the extinguisher is not more than 3-1/2 feet above the floor.

Extinguishers mounted in cabinets or wall recesses or set on shelves will be placed so that the extinguisher operating instructions face outward. The location of such extinguishers will be made conspicuous by marking the cabinet or wall recess in a contrasting color which will distinguish it from the normal décor.

Extinguishers must be distributed in such a way that the amount of time needed to travel to their location and back to the fire does not allow the fire to get out of control. OSHA requires that the travel distance for Class A and Class D extinguishers not exceed 75 feet. The maximum travel distance for Class B extinguishers is 50 feet because flammable liquid fires can get out of control faster that Class A fires. There is no maximum travel distance specified for Class C extinguishers, but they must be distributed on the basis of appropriate patterns for Class A and B hazards.

Inspection and Maintenance of Extinguishers

Once an extinguisher is selected, purchased, and installed, it is the responsibility of the Safety and Health Manager to oversee the inspection, maintenance, and testing of fire extinguishers to ensure that they are in proper working condition and have not been tampered with or physically damaged. This includes a monthly visual inspection.

Fire Safety Inspections and Housekeeping:

First line Supervisors and the Safety and Health Manager are responsible for conducting work site surveys at least annually. These surveys should include observations of work site safety and housekeeping issues and should specifically address proper storage of chemicals and supplies, unobstructed access to fire extinguishers, and emergency evacuation routes. Also, they should

determine if an emergency evacuation plan is present in work areas and that personnel are familiar with the plan.

Emergency Egress:

Every exit will be clearly visible, or the route to it conspicuously identified in such a manner that every occupant of the building will readily know the direction of escape from any point. At no time will exits be blocked.

Any doorway or passageway which is not an exit or access to an exit but which may be mistaken for an exit, will be identified by a sign reading "Not An Exit" or a sign indicating it actual use (i.e., "Storeroom"). Exits and accesses to exits will be marked by a readily visible sign. Each exit sign (other than internally illuminated signs) will be illuminated by a reliable light source providing not less than 5 foot-candles on the illuminated surface.

Facilities Design Review:

Facilities will be designed in a manner consistent with health and safety regulations and standards of good design. Company Management, together with Safety and Health Manager, will ensure that there is appropriate health and safety review of facility concepts, designs, and plans. A formal design review process is currently in place for all new construction efforts.

Occupant Emergency Plan for Persons with Disabilities:

The first line supervisor is assigned the responsibility to assist Persons with Disabilities under their supervision. An alternate assistant will be chosen by the supervisor. The role of the two assistants is to report to their assigned person, and to either assist in evacuation or assure that the Persons with Disabilities is removed from danger.

- Supervisors, alternates, and the person with a disability will be trained by the Safety and Health Manager on available escape routes and methods.
- A list of persons with disabilities is kept in the Office of Health and Safety. This list is updated by the Safety and Health Manager and the Office of Personnel Management.
- Visitors who have disabilities will be assisted in a manner similar to that of Company employees. The Host of the person with disabilities will assist in their evacuation.

Emergencies Involving Fire:

Fire Alarms-

In the event of a fire emergency, a fire alarm will sound for the building.

Evacuation Routes and Plans-

Each facility shall have an emergency evacuation plan. All emergency exits shall conform to NFPA standards.

Should evacuation be necessary, go to the nearest exit or stairway and proceed to an area of refuge outside the building. Most stairways are fire resistant and present barriers to smoke if the doors are kept closed.

Do not use elevators. Should the fire involve the control panel of the elevator or the electrical system of the building, power in the building may be cut and you could be trapped between floors. Also, the elevator shaft can become a flue, lending itself to the passage and accumulation of hot gases and smoke generated by the fire.

Emergency Coordinators-

Emergency Coordinators will be responsible for verifying personnel have evacuated from their assigned areas.

Fire Emergency Procedures-

If you discover a fire:

1. Activate the nearest fire alarm.

2. Notify the fire department by dialing 911. Give your location, the nature of the fire, and your name.

3. Notify the Manager on duty and other occupants.

4. Notify the Safety and Health Manager.

Fight the fire ONLY if:

1.The fire department has been notified of the fire, AND

2.The fire is small and confined to its area of origin, AND

3.You have a way out and can fight the fire with your back to the exit, AND

4.You have the proper extinguisher, in good working order, AND know how to use it.

5. If your are not sure of your ability or the fire extinguisher's capacity to contain the fire, leave the area.

If you hear a fire alarm:

1. Evacuate the area. Close windows, turn off gas jets, and close doors as you leave.

2. Leave the building and move away from exits and out of the way of emergency operations.

3. Assemble in a designated area.

4. Report to the Manager/monitor so he/she can determine that all personnel have evacuated your area.

5. Remain outside until competent authority (Physical Security, Safety and Health Manager, or your supervisor) states that it is safe to re-enter.

Evacuation Routes

1.Learn at least two escape routes, and emergency exits from your area.

2.Never use an elevator as part of your escape route.

3.Learn to activate a fire alarm.

4.Learn to recognize alarm sounds.

5.Take an active part in fire evacuation drills.

Flammable Liquids

Purpose

Proper Storage and use of flammable liquids can significantly reduce the possibility of accidental fires and injury to employees. To minimize risk to life and properly, the requirements of NFPA 30 & 321 and OSHA Standard 1910.106 have been implemented. MSDS for flammable liquids are kept in the _____ office and at each storage location.

Responsibilities

Management

- Provide proper storage for flammable liquids
- Ensure proper training is provided to employees who work with flammable liquids
- Ensure containers are properly labeled

Supervisors

- 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 liquids

Employees

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

Hazard Control

Administrative Controls

- Designated storage areas
- Limiting amount of flammable liquids in use and storage
- Employee Training
- Limited & controlled access to bulk storage areas
- Posted Danger, Warning and Hazard Signs

Engineering Controls

- Properly designed flammable storage areas
- Ventilated Storage areas
- Grounding Straps on Drums and dispensing points

Definitions

Flammable Liquid - a liquid with a flashpoint below 100^0F

Class IA - flashpoint below 73^0F and boiling point below 100^0F

Class IB - flashpoint below 73^0F and boiling point above 100^0F

Class IC - flash at or above 73^0F and below 100^0F

Combustible Liquids - a liquid having a flash point at or above 100^0 F.

Class II Combustibles - Flashpoint above 100^0F and below 140^0F

Class III Combustibles - Flashpoint at or above 140^0F

Subclass IIIA - flashpoint at or above 140^0F and below 200^0F

Subclass IIIB - flashpoint at or above 200^0F

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 or in low value structures at least 50 feet from any other structure. Do not store other combustible materials near flammable storage areas or lockers
- 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 covered containers.
- Safety cans used for dispensing flammable or combustible liquids shall be kept at a point of use.
- Appropriate fire extinguishers are to be mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
- 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 IAW NFPA guidelines. All tank areas shall be designated no smoking - no hot work - no open flame areas.
- No flames - hotwork or smoking is be 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.
- Flammable liquid transfer areas are to be separated from other operations by distance or by construction having proper fire resistance.
- Class I liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.
- Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.

- 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. Spills shall be cleaned up promptly.
- 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.
- 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 forces 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 plastic1	1 pt[2]	1 qt[2]	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

Where approved storage cabinets or rooms are not provided, inside storage will comply with the following basic conditions:

The storage of any flammable or combustible liquid shall not physically obstruct a means of egress from the building or area.

Containers of flammable or combustible liquids will remain tightly sealed except when transferred, poured or applied. Remove only that portion of liquid in the storage container required to accomplish a particular job.

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 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 or 5 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.

Ventilation

Every inside storage room will be provided with a continuous mechanical exhaust ventilation system. To prevent the accumulation of vapors, the location of both the makeup and exhaust air openings will be arranged to provide, as far as practical, air movement directly to the exterior of the building and if ducts are used, they will not be used for any other purpose.

Designated Flammable Storage Areas are:

1.

2.

3.

Chemical Segregation & Incompatibilities Guidelines

Class of Chemical	**Examples**	Recommended Storage Method	Incompatible Materials	Possible Reaction If Mixed
Corrosive Acids	Mineral Acids – Chromic Acid Hydrogen Chloride Hydrochloric Acid Nitric Acid Perchloric Acid Phosphoric Acid Sulfuric Acid	Separate cabinet or storage area away from potential water sources, i.e. under sink	Flammable Liquids Flammable Solids Bases Oxidizers Poisons	Heat Gas Generation Violent Reaction
Corrosive Bases/ Caustics	Ammonium Hydroxide Sodium Hydroxide Sodium Bicarbonate	Separate cabinet or storage area away from potential water sources, i.e. under sink	Flammable Liquids Flammable Solids Acids Oxidizers Poisons	Heat Gas Generation Violent Reaction
Explosives	Ammonium Nitrate Nitro Urea Picric Acid Trinitroaniline Trinitrobenzene Trinitrobenzoic Acid Trinitrotoluene	Secure location away from other chemicals	Flammable Liquids Oxidizers Poisons Acids Bases	Explosion Hazard

Flammable Liquids	Urea Nitrate Acetone Benzene Diethyl Ether Methanol Ethanol Toluene Glacial Acetic Acid	Grounded flammable storage cabinet of flammable storage refrigerator	Acids Bases Oxidizers Poisons	Fire Hazard Heat Violent Reaction
Flammable Solids	Phosphorus Magnesium	Separate dry cool area	Acids Bases Oxidizers Poisons	Fire Hazard Heat Violent Reaction
Oxidizers	Sodium Hypochlorite Benzoyl Peroxide Potassium Permanganate Potassium Chlorate Potassium Dichromate Peroxides Perchlorates Chlorates Nitrates	Spill tray that is separate from flammable and combustible materials	Reducing Agents Flammables Combustibles Corrosives	Fire Hazard Toxic Gas Generation
Poisons	Cyanides Cadmium Mercury Osmium Acrylamide DMSO	Vented, cool, dry area in unbreakable chemically resistant secondary containers	Flammable Liquids Acids Bases Oxidizers Corrosives	Generation of Toxic & Flammable Gas Violent Reaction
Water Reactive Chemicals	Sodium Metal Potassium Metal Lithium Metal Lithium Aluminum Hydride	Dry, cool location away from potential spray from fire sprinklers and other water sources, i.e. under sink	Aqueous Solutions Oxidizers	Heat Violent Reaction
Flammable Compressed Gases	Methane Acetylene Propane Hydrogen	Cool, dry area away from oxidizing gases while securely attached to wall or bench	Oxidizing & Toxic Compressed Gases Oxidizing Solids	Fire Hazard Explosion Hazard
Oxidizing Compressed Gases	Oxygen Chlorine Bromine	Cool, dry area away from flammable gases while securely attached to wall or bench	Flammable Gases	Fire Hazard Explosion Hazard

Poisonous Compressed Gases	Carbon Monoxide Hydrogen Sulfide	Cool, dry area away from flammable gases or liquids while securely attached to wall or bench	Flammable Gases Oxidizing Gases	Release of Toxic Gas Violent Reaction

Partial Incompatibility Listing

Compound/Class	Avoid Storage Near or Contact With:
Acids	
Acetic Acid	Chromic acid, nitric acid, hydroxyl compounds, ethylene, glycogen, perchloric acid, peroxides, permanganate
Hydrofluoric Acid	Ammonia (aqueous or anhydrous) Nitric Acid (conc.) Acetic acid, aniline, chromic acid, acetone, alcohol, or other flammable liquids, hydrocyanic acid, hydrogen sulfide, or other flammable gases, nitratable substances: copper, brass or any heavy metals (or will generate nitrogen dioxide/nitrous fumes) or organic products such as wood and paper
Sulfuric Acid	Light metals (lithium, sodium, potassium), chlorates, perchlorates, permanganates
Bases	
Ammonia	Mercury, chlorine, bromine, iodine, hydrofluoric acid, calcium hypochlorite
Calcium oxide	Water
Alkaline metals	Sodium, potassium, magnesium, calcium, aluminum, carbon dioxide, carbon tetrachloride or other chlorinated hydrocarbons, halogens, water
Bromine	Ammonia, acetylene, butadiene, methane, propane, butane (or other petroleum gases), hydrogen, sodium carbide, turpentine, benzene, finely divided metals
Carbon, activated	Calcium hypochlorite, oxidizing agents
Chlorine	Ammonia, acetylene, butadiene, methane, propane, butane, or other petroleum gases, hydrogen, sodium carbide, turpentine, benzene, finely divided metals
Copper	Acetylene, hydrogen peroxide, nitric acid
Fluorine	Isolate from everything
Iodine	Acetylene, ammonia (aqueous or anhydrous), hydrogen
Mercury	Acetylene, ammonia, fulminic acid (produced in nitric acid ethanol mixtures)
Oxygen	Oils, grease, hydrogen, other flammable gases, liquids, or solids
Phosphorous (white)	Air, oxygen, caustic alkalis as reducing agents (or will generate phosphine)
Potassium	Carbon tetrachloride, carbon dioxide, water
Silver	Acetylene, oxalic acid, tartaric acid, fulminic acid (produced in nitric acid-ethanol mixtures), and ammonium compounds

Organics

Acetone ---------- Concentrated nitric acid and sulfuric acid mixtures
Acetylene ---------- Fluorine, chlorine, bromine, copper, silver, mercury
Aniline ---------- Nitric acid, hydrogen peroxide
Flammable Liquids -- Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid,
---------- sodium peroxide, halogens
Hydrocarbons--------- Fluoride, chlorine, bromine, chromic acid, sodium peroxide
---------- (propane, butane, etc.)
Nitroparaffins -------- Inorganic bases, amines
Oxalic Acid ---------- Silver, mercury

Oxidizers

Chlorates ---------- Ammonia salts, acids, metal powders, sulfur, finely divided
---------- organics, or combustible materials
Chromic Acid (trioxide)-----Acetic acid, naphthalene, camphor, glycerol, turpentine,
---------- alcohol or flammable liquids
Ammonium Nitrate -- Acids, metal powders, flammable liquids, chlorates, nitrates, sulfur,
finely divided organic or combustible materials
Chlorine Dioxide ---- Ammonia, methane, phosphine, hydrogen sulfide,
Cumene Hydroperoxide--Organic or inorganic acids
Hydrogen Peroxide -- Copper, chromium, iron, most other metals or salts, alcohols,
---------- acetone, or other flammable liquids, aniline, nitromethane, or other -------
----------organic or combustible materials
Hypochlorites -------- Acids (will generate chlorine or hypochlorous acid
Nitrates ---------- Sulfuric acid (will generate nitrogen dioxide)
Perchloric Acid ------ Acetic acid, bismuth and its alloys, alcohol, paper, wood, grease,
---------- oils
Peroxides (Organics) Organic or inorganic acids; also avoid friction and store cold
Potassium Chlorate -- Acids, especially sulfuric acid
Potassium Permanganate----Glycerol, ethylene glycol, benzaldehyde, sulfuric acid
Sodium Peroxide ---- Any oxidizable substance such as methanol, ethanol, glycerol,
---------- ethylene glycol, glacial acetic acid, acetic anhydride, benzaldehyde, ------
----------furfural, methyl acetate, ethyl acetate, carbon disulfide
Alkaline metals ------ Sodium, potassium, magnesium, calcium, aluminum, carbon dioxide,
carbon tetrachloride or other chlorinated hydrocarbons, halogens, water
Calcium oxide -------- Water
Cyanides ---------- Acids (will generate hydrogen cyanide)
Phosphorous (white) - Air, oxygen, caustic alkalis as reducing agents (will generate phosphine)
Potassium ---------- Carbon tetrachloride, carbon dioxide, water
Sodium ---------- Carbon tetrachloride, carbon dioxide, water
Sodium Peroxide ---- Any oxidizable substance such as methanol, ethanol, glycerol,
---------- ethylene glycol, glacial acetic acid, acetic anhydride, benzaldehyde,
----------furfural, methyl acetate, ethyl acetate, carbon disulfide
Sulfides ---------- Acids (will generate hydrogen sulfide)

Reducing Agents

Hydrazine ---------- Hydrogen peroxide, nitric acid, other oxidants
Nitrites ---------- Acids (will generate nitrous fumes)
Sodium Nitrite -------- Ammonium nitrate and other ammonium salts

Toxics/Poisons

Arsenicals ---------- Reducing agents (will generate arsine)
Azides ---------- Acids (will generate hydrogen azide)
Cyanides ---------- Acids (will generate hydrogen cyanide)
Hydrocyanic Acid --- Nitric Acid, alkalis
Hydrogen Sulfide ---- Fuming nitric acid, oxidizing gases
Selenides ---------- Reducing agents (will generate hydrogen selenide)
Sulfides ---------- Acids (will generate hydrogen sulfide)
Tellurides ---------- Reducing agents (will generate hydrogen telluride) 03/05/01

3.6
Company Policy for Electrical Hazards
Qualified and Non-Qualified Personnel

This policy for the prevention of employee exposure to electrical hazards is adopted by SEI Solutions. in accordance with the following OSHA regulations:

- *§1910.332 –* ***Training***
- *§1910.333 –* ***Selection and Use of Work Practices***
- *NFPA 70E -* ***Standards for Electrical Safety in the Workplace***

SEI Solutions has implemented this policy to ensure that no employee is exposed to electrical hazards in the workplace. The project supervisor responsible for ensuring the following policy for controls, training, personal protective equipment, and safe work practices is enforced:

- Only qualified personnel are authorized to perform work, service, or maintenance on electrical parts or systems at SEI Solutions.
- Non-qualified personnel are prohibited by Company Policy from working on or near exposed energized electrical circuits or systems. If a work task requires unqualified personnel, any exposed electrical systems will be de-energized and lockout/tagout procedures adhered to, per Company Policy, before unqualified personnel are allowed access to the work areas. Non-qualified personnel will be trained in the recognition and avoidance of electrical hazards in the work area.
- The Safety Director will ensure that all employees exposed to work involving electrical systems or energized parts will be trained in and familiar with the safety-related work practices required by OSHA regulation and NFPA 70E that pertain to their respective job assignments.
- The Safety Director will ensure that all employees exposed to work involving electrical systems will be trained in, and familiar with, the following:
- The requirements of NFPA 70E Standards for Electrical Safety in the Workplace
- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
- The skills & techniques necessary to determine the nominal voltage of exposed live parts.

- The clearance distances specified in §1910.333(c) and the corresponding voltages to which the qualified person will be exposed.
- Safety-related work practices will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices will be consistent with the nature and extent of the associated electrical hazards.
- Live parts to which an employee may be exposed will be de-energized before the employee works on or near them.
- If the exposed live parts are not de-energized for reasons of increased or additional hazards, other safety-related work practices such as insulating shielding will be used to protect employees who may be exposed to the electrical hazards involved.
- Live electrical parts or systems which an employee may be exposed to will be de-energized prior to beginning work on the system. Systems will be assured of being de-energized by proper lockout procedures following company policy.
- Any work to be performed on energized parts will require the use of appropriate personal protective equipment, insulating and shielding materials, and insulated tools.
- If work is to be performed near overhead lines, the lines will be de-energized and grounded, or other protective measures such as insulating shielding will be provided before work is started.
- Vehicles or equipment working near overhead lines will be required to maintain a safe working distance of at least 10 feet. If the voltage is higher than 50 kV, the clearance will be increased 4 inches for every 10 kV over that voltage.
- Employees may not enter spaces containing exposed energized parts or work on energized parts unless illumination is provided that enables the employee to perform the work safely. Employees may not reach blindly into areas which may contain energized parts.
- When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, SEI Solutions., will provide, and the employee will use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like will be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

- All workers will maintain the safe approach distances as stated in §1910.333(c)(3) Table S-5

- Conductive materials and equipment that are in contact with any part of an employee's body will be handled in a manner to prevent them from contacting exposed energized conductors or circuit parts or will be shielded to prevent conduction of electrical energy. Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts while performing work.

- If conductive materials will be handled in the vicinity of energized electrical parts, the hazardous parts will be shielded or otherwise insulated to prevent accidental contact by the employee or materials being handled.

- Portable ladders will have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts. The employee will ensure that the placement of any ladder will allow a safe working distance from any energized parts or equipment.

Training

The training required will be of the classroom or on-the-job type. The degree of training provided will be determined by the risk to the employee based upon the NFPA 70E - Standards for Electrical Safety in the Workplace.

- The training requirements apply to employees who face a risk of electric shock that is not reduced to a safe level by the electrical installation requirements.

- Other employees who also may reasonably be expected to face comparable risk of injury due to electric shock or other electrical hazards will also be trained.

- Employees will be trained in and familiar with the safety-related work practices required that pertain to their respective job assignments.

- Employees who are not qualified persons will also be trained in and familiar with any electrically related safety practices not specifically addressed by regulations, but which are necessary for their safety.

- Qualified persons (i.e., those permitted to work on or near exposed energized parts) will, at a minimum, be trained in and familiar with the following:

    - The skills and techniques necessary to distinguish exposed live parts from other parts

of electric equipment.

- The skills and techniques necessary to determine the nominal voltage of exposed live parts.
- The specified clearance distances and the corresponding voltages to which the qualified person will be exposed.
- Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials will also have the required training.

Safe Work Practices

- Safe work practices will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized. The specific safe work practices will be consistent with the nature and extent of the associated electrical hazards.
- Live parts to which an employee may be exposed will be deenergized before the employee works on or near them unless the *Safety Director* can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.
- If the exposed live parts are not deenergized for reasons of increased or additional hazards or infeasibility, other safe work practices will be used to protect employees who may be exposed to the electrical hazards involved. Such work practices will protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used will be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts.

Deenergized Electrical Equipment

- Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged will be treated as energized parts. This applies to work on or near them.
- While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts will be locked out or tagged or both.

Lockout-Tagout Procedures

- *The Safety Director* will maintain a written copy of these procedures and will make them available for inspection by employees and OSHA.
- Deenergizing equipment.
    - Safe procedures for deenergizing circuits and equipment will be determined before circuits or equipment are deenergized.
    - The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.
    - Stored electric energy which might endanger personnel will be released. Capacitors will be discharged, and high capacitance elements will be short-circuited and grounded, if the stored electric energy might endanger personnel.
    - Stored non-electrical energy in devices that could reenergize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.
- Application of locks and tags includes.
    - A lock and a tag will be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed. The lock will be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.
    - Each tag will contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.
    - If a lock cannot be applied, or if *The Safety Director* can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.
    - A tag used without a lock will be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

- A lock may be placed without a tag only under the following conditions:
  - Only one circuit or piece of equipment is deenergized.
  - The lockout period does not extend beyond the work shift.
  - Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.
  - Verification of deenergized condition requirements will be met before any circuits or equipment can be considered and worked as deenergized.

- A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
- A qualified person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are deenergized. The test will also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment will be checked for proper operation immediately after this test.
- Reenergizing equipment requirements will be met before circuits or equipment are reenergized, even temporarily.
- A qualified person will conduct tests and visual inspections to verify that all tools, electrical jumpers, shorts, grounds, or other devices have been removed, so that the circuits and equipment can be safely energized.
- Employees exposed to the hazards associated with reenergizing the circuit or equipment will be warned to stay clear of circuits and equipment.
- Each lock and tag will be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that:
  - *The Safety Director* ensures that the employee who applied the lock or tag is not available at the workplace.
  - *The Safety Director* ensures that the employee is aware that the lock or tag has been

removed before he or she resumes work at that workplace.

- There will be a visual determination that all employees are clear of the circuits and equipment.

Energized Electrical Equipment

- Only qualified personnel may work on electric circuit parts or equipment that have not been deenergized under the previously stated procedures. Such personnel will be capable of working safely on energized circuits and will be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.
- If work is to be performed under or near overhead lines, the lines will be deenergized and grounded, or other protective measures will be provided before work is started. If the lines are to be deenergized, arrangements will be made with the person or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions will prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.
- When an unqualified person is working in an elevated position near overhead lines, the location will be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:
    - For voltages to ground 50kV or below – 10 feet.
    - For voltages to ground over 50kV – 10 feet plus 4 inches for every 10kV over 50kV.
- When an unqualified person is working on the ground in the vicinity of overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines than the distances given above. For voltages normally encountered with overhead power line, objects which do not have an insulating rating for the voltage involved are considered to be conductive.
- When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:
    - The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the

energized part on which work is performed).

- The energized part is insulated both from all other conductive objects at a different potential and from the person.
- The person is insulated from all conductive objects at a potential different from that of the energized part.

Table S-5 - Approach Distances for Qualified Employees - Alternating Currents

Voltage range (phase to phase)	Minimum approach distance
300V and less	Avoid contact.
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV	I ft. 6 in. (46 cm).
Over 2kV, not over 15kV	2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV	3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV	4 ft. 6 in. (137 cm).

- Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines will be operated so that a clearance of 10 ft. is maintained. If the voltage is higher than 50kV, the clearance will be increased 4 in. for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced:
  - If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance will be increased 4 in. for every 10 kV over that voltage.
  - If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.
  - If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in Table S-5.

- Employees standing on the ground will not contact the vehicle or mechanical equipment or any of its attachments, unless:
    - The employee is using protective equipment rated for the voltage.
    - The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted below.
- If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact.
- Additional precautions, such as the use of barricades or insulation, will be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

Illumination

- Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.
- Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts.
- Employees may not reach blindly into areas which may contain energized parts.

Confined Spaces

- When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, *SEI Solutions.* will provide, and the employee will use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts.
- Doors, hinged panels, and the like will be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

Conductive Materials and Equipment

- Conductive materials and equipment that are in contact with any part of an employee's body will be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts.
- If an employee will handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, *The Safety Director* will institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

Portable Ladders

- Portable ladders will have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

Conductive Apparel

- Conductive articles of jewelry and clothing (such a watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

Housekeeping

- Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided.

- Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

Interlocks

- Only a qualified person following the requirements of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system will be returned to its operable condition when this work is completed.

§1910.332 TRAINING

(a) Scope

The training requirements contained in this section apply to employees who face a risk of electric shock that is not reduced to a safe level by the electrical installation requirements of §§1910.303 through 1910.308.

Note: Employees in occupations listed in Table S-4 face such a risk and are required to be trained. Other employees who also may reasonably be expected to face a comparable risk of injury due to electric shock or other electrical hazards must also be trained.

(b) Content of training.

(1) Practices addressed in this standard. Employees shall be trained in and familiar with the safety-related work practices required by §§1910.331 through 1910.335 that pertain to their respective job assignments.

(2) Additional requirements for unqualified persons. Employees who are covered by paragraph (a) of this section but who are not qualified persons shall also be trained in and familiar with any electrically related safety practices not specifically addressed by §§1910.331 through 1910.335 but which are necessary for their safety.

(3) Additional requirements for qualified persons. Qualified persons (i.e., those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following:

(i) The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.

(ii) The skills and techniques necessary to determine the nominal voltage of exposed live parts.

(iii) The clearance distances specified in §1910.333(c) and the corresponding voltages to which the qualified person will be exposed.

Note 1: For the purposes of §§1910.331 through 1910.335, a person must have the training required by paragraph (b)(3) of this section to be considered a qualified person.

Note 2: Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials must also have the training needed to meet §1910.333(c)(2).

(c) Type of training

The training required by this section shall be of the classroom or on-the-job type. The degree of training provided shall be determined by the risk to the employee.

Table S-4 - Typical Occupational Categories of Employees Facing a Higher Than Normal Risk of Electrical Accident

Occupation
Blue collar supervisors.[1]
Electrical and electronic engineers.[1]
Electrical and electronic equipment assemblers.[1]
Electrical and electronic technicians.[1]
Electricians.
Industrial machine operators.[1]
Material handling equipment operators.[1]
Mechanics and repairers.[1]
Painters.[1]
Riggers and roustabouts.[1]
Stationary engineers.[1]
Welders.

[1] Workers in these groups do not need to be trained if their work or the work of those they supervise does not bring them or the employees they supervise close enough to exposed parts of electric circuits operating at 50 volts or more to ground for a hazard to exist.

§1910.333 SELECTION AND USE OF WORK PRACTICES.

(a) General

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

(1) Deenergized parts

Live parts to which an employee may be exposed shall be deenergized before the

employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing or electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Note 3: Work on or near deenergized parts is covered by paragraph (b) of this section.

(2) Energized parts

If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. Specific work practice requirements are detailed in paragraph (c) of this section.

(b) Working on or near exposed deenergized parts.

(1) Application

This paragraph applies to work on exposed deenergized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged in accordance with paragraph (b) of this section shall be treated as energized parts, and paragraph (c) of this section applies to work on or near them.

(2) Lockout and tagging

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both in accordance with the requirements of this paragraph. The requirements shall be followed in the order in which they are presented (i.e., paragraph (b)(2)(i) first, then paragraph (b)(2)(ii), etc.).

Note 1: As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods.

Note 2: Lockout and tagging procedures that comply with paragraphs (c) through (f) of §1910.147 will also be deemed to comply with paragraph (b)(2) of this section provided that:

(1) The procedures address the electrical safety hazards covered by this Subpart; and

(2) The procedures also incorporate the requirements of paragraphs (b)(2)(iii)(D) and (b)(2)(iv)(B) of this section.

(i) Procedures

The employer shall maintain a written copy of the procedures outlined in paragraph (b)(2) and shall make it available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.

Note: The written procedures may be in the form of a copy of paragraph (b) of this section.

(ii) Deenergizing equipment.

(A) Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment are deenergized.

(B) The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

(C) Stored electric energy which might endanger personnel shall be released.

Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

Note: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

(D) Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

(iii) Application of locks and tags.

(A) A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided in paragraphs (b)(2)(iii)(C) and (b)(2)(iii)(E) of this section. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

(B) Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

(C) If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

(D) A tag used without a lock, as permitted by paragraph (b)(2)(iii)(C) of this section, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

(E) A lock may be placed without a tag only under the following conditions:

(1) Only one circuit or piece of equipment is deenergized, and
(2) The lockout period does not extend beyond the work shift, and
(3) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

(iv) Verification of deenergized condition

The requirements of this paragraph shall be met before any circuits or equipment can be considered and worked as deenergized.

(A) A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

(B) A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are deenergized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately before and immediately after this test.

(v) Reenergizing equipment

These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.

(A) A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

(B) Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

(C) Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that:

(1) The employer ensures that the employee who applied the lock or tag is not available at the workplace, and
(2) The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.

(D) There shall be a visual determination that all employees are clear of the circuits and equipment.

(c) Working on or near exposed energized parts.

(1) Application. This paragraph applies to work performed on exposed live parts (involving either direct contact or contact by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.

(2) Work on energized equipment. Only qualified persons may work on electric circuit parts or equipment that have not been deenergized under the procedures of paragraph (b) of this section. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

(3) Overhead lines. If work is to be performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before work is started. If the lines are to be deenergized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to deenergize and ground them.

If protective measures such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

Note: The work practices used by qualified persons installing insulating devices on overhead power transmission or distribution lines are covered by §1910.269 of this Part, not by §§1910.332 through 1910.335 of this Part. Under paragraph (c)(2) of this section, unqualified persons are prohibited from performing this type of work.

(i) Unqualified persons.

(A) When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

(1) For voltages to ground 50 kV or below – 10 feet (305 cm);
(2) For voltages to ground over 50 kV – 10 feet (305 cm) plus 4 inches (10 cm) for every 10 kV over 50 kV.

(B) When an unqualified person is working on the ground in the vicinity of

overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines than the distances given in paragraph (c)(3)(i)(A) of this section.

Note: For voltages normally encountered with overhead power lines, objects which do not have an insulating rating for the voltage involved are considered to be conductive.

(ii) Qualified persons. When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:

(A) The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation from the energized part on which the work is performed), or

(B) The energized part is insulated both from all other conductive objects at a different potential and from the person, or

(C) The person is insulated from all conductive objects at a potential different from that of the energized part.

(iii) Vehicular and mechanical equipment.

(A) Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet (305 cm) is maintained. If the voltage is higher than 50 kV, the clearance shall be increased 4 inches (10 cm) for every 10 kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

(1) If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 feet (122 cm). If the voltage is higher than 50 kV, the clearance shall be increased 4 inches (10 cm) for every 10 kV over that voltage.

(2) If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

(3) If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in Table S-5.

(B) Employees standing on the ground may not contact the vehicle or mechanical equipment or any of its attachments, unless:

(1) The employee is using protective equipment rated for the voltage; or

(2) The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted in paragraph (c)(3)(iii) of this section.

(C) If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

(4) Illumination.

(i) Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.

(ii) Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.

(5) Confined or enclosed workspaces. When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

(6) Conductive materials and equipment. Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, the employer shall institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

(7) Portable ladders. Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

(8) Conductive apparel. Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

(9) Housekeeping duties. Where live parts present an electrical contact hazard, employees may not perform housekeeping duties as such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

(10) Interlocks. Only a qualified person following the requirements of paragraph (c) of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system shall be returned to its operable condition when this work is completed.

Respiratory Protection Program

Policy:

All employees will be protected from exposure to airborne radioactive, chemical, or biological contamination by installing, implementing, or instituting feasible engineering or administrative controls. If these controls do not prove feasible, or while they are being installed/instituted, appropriate respiratory protection will be provided. For some experiments, respiratory protection may be provided as an additional safeguard against exposure.

It is the Company's policy to provide employees with a safe and healthful working environment. This is accomplished by utilizing facilities and equipment that have all feasible safeguards incorporated into their design. When effective engineering controls are not feasible, or when they are being initiated, protection shall be used to ensure personnel protection. All medical evaluation, respirators, and training are required to be provided free to the employee.

This program does not apply to contractors as they are responsible for providing their own respiratory protection programs and respiratory protective equipment.

Definitions:

a. Respirator – A device provided to protect the wearer from inhalation of harmful or nuisance atmospheres. Respirators may function by air purifying and/or air supplying techniques.

b. Air Purifying Respirator – A respirator that filters and/or absorbs contaminants from the ambient air being inhaled by the wearer.

c. Supplied Air Respirator – A respirator in which clean air is supplied to the facepiece from an auxiliary source away from the wearer.

d. Self-Contained Breathing Apparatus – A respirator in which the air supply is carried by the wearer.

e. Atmospheric Contamination – The term applies equally to gases such as nitrogen, carbon monoxide, and carbon dioxide; the vapors of volatile substances such as benzene and carbon tetrachloride; toxic dusts and fumes; radioactive materials; and so forth.

f. Respirator Fit Test – A test used to determine a proper match or fit between the facepiece of the respirator and face of the wearer.

Responsibilities:

a. Supervisor

Supervisors will ensure each employee under his or her supervision using a respirator has received appropriate training in its use and an annual medical evaluation. Supervisors will ensure the availability of appropriate respirators and accessories, provide adequate storage facilities, and encourage proper respirator equipment maintenance. Supervisors must be aware of tasks requiring the use of respiratory protection, and ensure all employees engaged in such work always use the appropriate respirators. The Supervisors are responsible for the following:

1. Ensures that all employees who wear respiratory protective devices are thoroughly trained in their use.

2. Provides employees with the respiratory protection appropriate for the operation, and ensures the use of such devices.

3. Identifies potentially hazardous conditions and immediately notifies the Safety Director for corrective action.

Supervisors shall contact the Safety Director prior to non-routine work which may expose workers to hazardous substances or oxygen deficient atmospheres. Examples of work which may require the use of respirators includes, but are not limited to:

- Asbestos abatement activities
- Abrasive blasting
- Cutting or melting lead or stripping lead-based paints from surfaces
- Welding or burning
- Painting, especially with epoxy or organic solvent coatings

- Using solvents, thinners, or degreasers
- Any work which generates large amounts of dust
- Working in a confined space
- Using formaldehyde to decontaminate a space
- Bioaerosols

b. Employee

1. Uses respiratory protective equipment as instructed and required under hazardous agent protocols.

2. Stores respirator properly to prevent damage and inspects prior to each use.

3. Reports any malfunction of respiratory protective equipment to the immediate supervisor.

c. Others

Personnel, such as employees, inspectors, and visitors, who must enter an area where the use of respiratory protective equipment is required, even when their stay time in the area may be 15 minutes or less, shall be provided with and use appropriate equipment, including instructions regarding use and limitations. Personnel shall be fit tested and medically qualified to wear the respirator being issued prior to entry to the site.

Contractors are required to develop and implement a respiratory protection program for their employees who must enter into or work in areas where exposure to hazardous materials cannot be controlled or avoided. This program must meet OSHA regulations and include issuance of respirators, medical evaluations, fit testing, and training.

d. Safety Director

1. Develops and implements all aspects of the respiratory protection program.

2. Develops training programs and standard operating procedures to fulfill the requirements of existing OSHA regulations and amendments. 3.Purchases, selects, inspects, maintains, cleans, stores, and fit tests respiratory protective equipment.

4. Periodically inspects and replaces all respiratory protective devices stored for emergency use.

Procedures:

a. Selection –
Respirators shall be selected based on the potential hazards to which the worker is exposed. The following factors shall be ascertained by the Health and Safety Branch to ensure that the device selected for the employee will provide satisfactory protection when used properly:

1. Chemical, physical, and toxicological properties of the contaminant(s).

2. Review of actual and potential hazards to assess extent of injurious effects produced under all conditions of potential exposure.

3. Evaluation of the duties to be performed by the wearer as they relate to restriction of movement and duration of potential exposure.

4. An understanding of the principles, design, scope of use, limitations, advantages, and disadvantages of the available respirators. Respiratory equipment selected will be NIOSH certified and be in accordance with existing OSHA regulations.

b. Medical Evaluations –
It is the responsibility of the Safety Director to review the health status of all employees who may be required to wear respiratory equipment. In the event of prolonged respirator use, the wearer should have a medical examination to determine if he/she is medically able to wear respiratory protective equipment without aggravating a pre-existing medical condition. The medical examination must be done prior to fit-testing, be confidential, during normal working hours, convenient,

understandable, and the employee given a chance to discuss the results with the physician or other licensed health care professional (PLHCP).

Medical considerations include, but are not limited to the following:

- History of asthma or emphysema
- Difficulty in breathing
- Previously documented lung problems
- High blood pressure
- Artery diseases
- Documented heart problems
- Missing or arthritic fingers
- Facial scars
- Claustrophobia
- Poor eyesight

c. Fitting –

Everyone required to use a respirator of any type will be fitted by the Safety Director prior to using any such device. The fit test will include a demonstration of proper donning, wearing, and field fit testing techniques, an extensive leak test using a solution of isoamyl acetate as the test vapor and a quantitative fit test using a respirator fit tester. Any individual with a beard or other facial hair that may prevent a proper facepiece-to-face seal will not be fit tested until the hair has been removed. A separate Respirator Fitting and Training Record shall be maintained for each participating individual.

Respirator Fit testing

A fit test shall be used to determine the ability of each individual respirator wearer to obtain a satisfactory fit with any air-purifying respirator. Both quantitative and qualitative fit tests will be performed. Personnel must successfully pass the fit test before being issued an air-purifying respirator.

No Company employee is permitted to wear a negative-pressure respirator in a work situation until he or she has demonstrated that an acceptable fit can be obtained. Respirator fitting is conducted initially upon assignment to a task requiring use of a respirator. Refitting is conducted annually thereafter upon successful completion of the respirator training.

Respirator Fit testing (continued)

Fit testing will be conducted by the Safety Director and the test results will be the determining factor in selecting the type, model, and size of negative-pressure respirator for use by each individual respirator wearer.

Fit Checking-

Each time a respirator is donned, the user will perform positive and negative pressure fit checks. These checks are not a substitute for fit testing. Respirator users must be properly trained in the performance of these checks and understand their limitations.

A. Negative Pressure Check

Applicability/Limitations: This test cannot be carried out on all respirators; however, it can be used on facepieces of air purifying respirators equipped with tight-fitting respirator inlet covers and on atmosphere supplying respirators equipped with breathing tubes which can be squeezed or blocked at the inlet to prevent the passage of air.

Procedure: Close off the inlet opening of the respirator's canister(s), cartridge(s), or filter(s) with the palm of the hand, or squeeze the breathing air tube or block its inlet so that it will not allow the passage of air. Inhale gently and hold for at least 10 seconds. If the facepiece collapses slightly and no inward leakage of air into the facepiece is detected, it can be reasonably assumed that the respirator has been properly positioned and the exhalation valve and facepiece are not leaking.

B. Positive Pressure Check

Applicability/Limitations: This test cannot be carried out on all respirators; however, respirators equipped with exhalation valves can be tested.

Procedure: Close off the exhalation valve or the breathing tube with the palm of the hand. Exhale gently. If the respirator has been properly positioned, a slight positive pressure will build up inside the facepiece

without detection of any outward air leak between the sealing surface of the facepiece and the face.

Qualitative Fit Testing

Federal regulations (29 CFR 1910.1001) require qualitative fit tests of respirators and describe step-by-step procedures. This test checks the subject's response to a chemical introduced outside the respirator facepiece. This response is either voluntary or involuntary depending on the chemical used. Several methods may be used. The two most common are the irritant smoke test, and the odorous vapor test.

a. Irritant Smoke

The irritant smoke test is an involuntary response test. Air purifying respirators must be equipped with a high efficiency particulate air (HEPA) filter for this test. An irritant smoke, usually either stannic chloride or titanium tetrachloride, is directed from a smoke tube toward the respirator. If the test subject does not respond to the irritant smoke, a satisfactory fit is assumed to be achieved. Any response to the smoke indicates an unsatisfactory fit.

The irritant smoke is an irritant to the eyes, skin, and mucous membranes. It should not be introduced directly onto the skin. The test subject must keep his or her eyes closed during the testing if a full facepiece mask is not used.

b. Odorous Vapor

The odorous vapor test is a voluntary response test. It relies on the subject's ability to detect an odorous chemical while wearing the respirator. Air purifying respirators must be equipped with an organic cartridge or canister for this test. Isoamyl acetate (banana oil) is the usual test. An isoamyl acetate-saturated gauze pad is placed near the facepiece-to-face seal of the respirator of the test subject's skin. If the test subject is unable to smell the chemical, than a satisfactory fit is assumed to be achieved. If the subject smells the chemical, the fit is unsatisfactory.

If the subject cannot smell the chemical, the respirator will be momentarily pulled away from the subject's face. If the subject is then able to smell the chemical, a satisfactory fit is assumed. If the subject cannot smell the chemical with the respirator pulled away from the face, this test is inappropriate for this subject, and a different test will be used.

This test is limited by the wide variation of odor thresholds among individuals and the possibility of olfactory fatigue. Since it is a voluntary response test it depends upon an honest response.

Quantitative Fit Testing

Quantitative fit testing, using the Portacount Plus fit test system, is generally performed on both full-face and half-face negative pressure respirators. Fit factors are determined by comparing the particle concentration outside the respirator with the concentration inside the respirator facepiece. An acceptable fit is achieved when the respirator wearer successfully completes a series of six programmed exercises (normal breathing, deep breathing, moving head up and down, moving head side to side, reading, and normal breathing) with a fit factor of 100 or more.

Special Problems

A. Facial Hair

No attempt is made to fit a respirator on an employee who has facial hair which comes between the sealing periphery of the facepiece and the face, or if facial hair interferes with normal functioning of the exhalation valve of the respirator.

B. Glasses and Eye/Face Protective Devices

Proper fitting of a respiratory protective device facepiece for individuals wearing corrective eyeglasses or goggles, may not be established if temple bars or straps extend through the sealing edge of the facepiece. If eyeglasses, goggles, face shield or welding helmet must be worn with a respirator, they must be worn so as not to adversely affect the seal of the facepiece. If a full-facepiece respirator is used, special prescription glasses inserts are available if needed.

d. Training –

Appropriate training and instructions in the proper use of each type of respirator shall be provided by the Safety Director. Respirator users and their supervisors will receive training on the contents of this Respiratory Protection Program and their responsibilities under it. They will be trained on the proper selection and use, as well as the limitations of the respirator. Training also covers how to ensure a proper fit before use and how to determine when a respirator is no longer providing the protection intended.

The Safety Director provides training of respirator wearers in the use, maintenance, capabilities, and limitations of respirators is initially upon assignment of personnel to tasks requiring the use of respirators. Retraining is given annually thereafter and only upon successful completion of the medical evaluation.

The training program will include the following:

Respirator training will be properly documented (Appendix A) and will include the type and model of respirator for which the individual has been trained and fit-tested.

This training will include, but not be limited to:

1.Nature and degree of respiratory hazard

2.Respirator selection, based on the hazard and respirator capabilities and limitations

3.Donning procedures and fit tests including hand's-on practice to ensure an effective face piece to face seal

4. Actual handling of the respirator and wearing it for a period in a test atmosphere.

5. A discussion of respirators construction, operating principles, and limitations.

6.Care of the respirator, e.g., need for cleaning, maintenance, storage, and/or replacement

7. Instruction on the nature of the hazard, including information on its physical properties, possible concentrations, modes of physiological action and means of detection.

8. Use and limitations of respirator

9. Discussions of maintenance and inspection procedures.

e. Inspection –

For sanitary and health reasons, clean respirators shall be used by one individual only and shall be returned to the Safety Director for cleaning, maintenance, and repairs. Cleaning and disinfecting of reusable components of a respirator unit will be performed by utilizing recognized procedures corresponding to the exposure atmosphere. Disposable respirators will be discarded properly after use by the individual. Inspection frequency for all unused devices shall be monthly. Units receiving routine use shall be inspected by the employee before and after each use. The inspection shall include the following checks when applicable.

1.Tightness of connections
2. Condition of facepiece, headbands, exhalation and inhalation valves, connecting tube, and canister
3. Pressure in cylinders (do not use if less than 1500 psi)
4. Deterioration of all rubber parts
5. Regulator mechanism
6. Lens of facepieces
7. Warning alarm (self-contained units)
8. Seal on cartridge package

f. Location and Storage of Respirators –

Location and storage of all respiratory devices shall be controlled by the Safety Director. When the need for respiratory equipment is anticipated, approval by the Safety Director should be obtained in advance.

After inspection, cleaning, and any necessary minor repairs, store respirators to protect against sunlight, heat, extreme cold, excessive moisture, damaging chemicals or other contaminants. Respirators placed at stations and work areas for emergency use shall be stored in compartments built for that purpose, shall be quickly accessible at all times and will be clearly marked. Routinely used respirators, such as half-mask or full-face air-purifying respirators, shall be placed in sealable plastic bags. Respirators may be stored in such places as lockers or tool boxes only if they are first placed in carrying cases or cartons. Respirators shall be packed or stored so that the facepiece and exhalation valves will rest in a normal position and not be crushed. Emergency use respirators shall be stored in a sturdy compartment that is quickly accessible and clearly marked.

g. Self-Contained Breathing Apparatus –
Emergency respirators in carrying cases shall be located in areas designated by the Safety Director. These respirators are provided for emergency situations only, and for use by authorized personnel. Any conditions requiring the use of these devices shall be reported to Safety Director.

h. Special Requirements for Confined Spaces –
In areas immediately hazardous to life or health, self-contained breathing apparatus, airline respirators or hose masks with blowers shall be used. For emergency rescue, a standby person with suitable self-contained breathing apparatus shall be at the nearest fresh air base. Communications (visual, voice or signal line) shall be maintained between all individuals present.

Persons using airline respirators and hose masks with blowers shall be equipped with safety harnesses and safety lines for lifting or removing them from hazardous atmospheres, or other equivalent provisions for rescue from hazardous atmospheres shall be used. More details concerning respiratory protection for confined space entry can be found in the Company's Confined Space Program.

Types of Respirators-

A. Air-Purifying Respirator

These respirators remove air contaminants by filtering, absorbing, adsorbing, or chemical reaction with the contaminants as they pass through the respirator canister or cartridge. This respirator is to be used only where adequate oxygen (19.5 to 23.5 percent by volume) is available. Air-purifying respirators can be classified as follows:

1. Particulate removing respirators, which filter out dusts, fibers, fumes and mists. These respirators may be single-use disposable respirators or respirators with replaceable filters.

NOTE: *Surgical masks do not provide protection against air contaminants. They are never to be used in place of an air-purifying respirator. They are for medical use only.*

2. Gas- and vapor-removing respirators, which remove specific individual contaminants or a combination of contaminants by absorption, adsorption or by chemical reaction. Gas masks and chemical-cartridge respirators are examples of gas- and vapor-removing respirators.

3. Combination particulate/gas- and vapor-removing respirators, which combine the respirator characteristics of both kinds of air-purifying respirators.

B. Supplied-Air Respirators

These respirators provide breathing air independent of the environment. Such respirators are to be used when the contaminant has insufficient odor, taste or irritating warning properties, or when the contaminant is of such high concentration or toxicity that an air-purifying respirator is inadequate. Air must be Grade D or better. If a compressors is used it must be located in a "clean" atmosphere, with in-line purification and tagged to indicate date or changeout. A Carbon monoxide monitor must be in place & set to alarm at 10 PPM

or monitored frequently. Fittings are incompatible for non-respirable gases and containers. Supplied- air respirators, also called air-line respirators, are classified as follows:

1. Demand

This respirator supplies air to the user on demand (inhalation) which creates a negative pressure within the facepiece. Leakage into the facepiece may occur if there is a poor seal between the respirator and the user's face.

2. Pressure-Demand

This respirator maintains a continuous positive pressure within the facepiece, thus preventing leakage into the facepiece.

3. Continuous Flow

This respirator maintains a continuous flow of air through the facepiece and prevents leakage into the facepiece.

C. Self-Contained Breathing Apparatus (SCBA)

This type of respirator allows the user complete independence from a fixed source of air and offers the greatest degree of protection but is also the most complex. Training and practice in its use and maintenance is essential. This type of device will be used in emergency situations only.

Identification of Respirator Cartridges and Gas Mask Canisters

Respirator cartridges and canisters are designed to protect against individual or a combination of potentially hazardous atmospheric contaminants and are specifically labeled and color coded to indicate the type and nature of protection they provide.

An approved label on the respirator will also specify the maximum concentration of contaminant(s) for which the cartridge or canister is approved. For example, a label may read:

"DO NOT WEAR IN ATMOSPHERES IMMEDIATELY DANGEROUS TO LIFE. MUST BE USED IN AREAS CONTAINING AT LEAST 20 PERCENT OXYGEN. DO NOT WEAR IN ATMOSPHERES CONTAINING MORE THAN ONE-TENTH PERCENT ORGANIC VAPORS BY VOLUME. REFER TO COMPLETE LABEL ON RESPIRATOR OR CARTRIDGE CONTAINER FOR ASSEMBLY, MAINTENANCE, AND USE."

Warning Signs of Respirator Failure

A. Particulate Air-Purifying

When breathing difficulty is encountered with a filter respirator (due to partial clogging with increased resistance), the filter(s) must be replaced. Disposable filter respirators must be discarded.

B. Gas or Vapor Air-Purifying

If, when using a gas or vapor respirator (chemical cartridge or canister), any of the warning properties (e.g., odor, taste, eye irritation, or respiratory irritation) occur, promptly leave the area and check the following:

- Proper face seal
- Damaged or missing respirator parts
- Saturated or inappropriate cartridge or canister

If no discrepancies are observed, replace the cartridge or canister. If any of the warning properties appear again, the concentration of the contaminants may have exceeded the cartridge or canister design specification. When this occurs an airline respirator or SCBA is required.

C. Service Life of Air-Purifying Respirator Canisters and Cartridges

The canisters or cartridges of air-purifying respirators are intended to be used until filter resistance precludes further use, or the chemical sorbent is expended as signified by a specific warning property, e.g., odor, taste, etc. New canisters, cartridges or filters shall always be provided when a respirator is reissued. When in doubt about the previous use of the respirator, obtain a replacement canister or cartridge.

D. Supplied Air Respirator

When using an airlines respirator, leave the area immediately when the compressor failure alarm is activated or if an air pressure drop is sensed. When using an SCBA leave the are as soon as the air pressure alarm is activated.

Maintenance and Issuance of Respirators:

Maintenance

The maintenance of respiratory protective devices involves a thorough visual inspection for cleanliness and defects (i.e., cracking rubber, deterioration of straps, defective exhalation and inhalation valves, broken or cracked lenses, etc.). Worn or deteriorated parts will be replaced prior to reissue. No respirator with a known defect is reissued for use. No attempt is made to replace components, make adjustments or make repairs on any respirator beyond those recommended by the manufacturer. Under no circumstances will parts be substituted as such substitutions will invalidate the approval of the respirator. Any repair to reducing or admission valves, regulators, or alarms will be conducted by either the manufacturer or a qualified trained technician.

Cleaning of Respirators

All respirators in routine use shall be cleaned and sanitized on a periodic basis. Respirators used non-routinely shall be cleaned and sanitized after each use and filters and cartridges replaced. Routinely used respirators are maintained individually by the

respirator wearer. Replacement cartridges and filters are obtained by contacting the Safety Director.

Cleaning and disinfection of respirators must be done frequently to ensure that skin-penetrating and dermatitis-causing contaminants are removed from the respirator surface. Respirators maintained for emergency use or those used by more than one person must be cleaned after each use by the user.

The following procedure is recommended for cleaning and disinfecting respirators:

1. Remove and discard all used filters, cartridges, or canisters.
2. Wash facepiece and breathing tube in a cleaner-disinfectant solution. A hand brush may be used to remove dirt. Solvents which can affect rubber and other parts shall not be used.
3. Rinse completely in clean, warm water.
4. Air dry in a clean area in such a way as to prevent distortion.
5. Clean other respirator parts as recommended by the manufacturer.
6. Inspect valves, head straps, and other parts to ensure proper working condition.
7. Reassemble respirator and replace any defective parts.
8. Place in a clean, dry plastic bag or other suitable container for storage after each cleaning and disinfection.

Issuance of Respirators

Respiratory protective equipment shall not be ordered, purchased, or issued to personnel unless the respirator wearer has received respirator training and a fit test. New employees who require respiratory protective equipment, must be placed into the respirator program before being issued equipment.

APPENDIX A

RESPIRATOR TRAINING CERTIFICATION

I hereby certify that I have been trained in the proper use and limitations of the respirator issued to me. The training included the following:

1. Instruction on putting on, fitting, testing and wearing the respirator.

2. Instruction on inspection, cleaning, and maintaining the respirator.

3. Explanation of dangers related to misuse.

4. Instructions on emergency situations.

I further certify that I understand the use, care, and inspection of the respirator and have tested and worn the unit.

Date: _____

Signed:_____ SSN: _____

Respirator Type Issued: _____

Training Coordinator: _____

APPENDIX B – FIT TEST WORKSHEETS

QUALITATIVE RESPIRATOR FIT TEST

Name: _____ SSN: _____

Clean Shaven? __Yes __No

Spectacle Kit? ___Yes ___No

Manufacturer/Model _____ Size: ___S ___M ___L

Irritant Smoke ___Pass ___Fail

Isoamyl Acetate ___Pass ___Fail

Manufacturer/Model_____ Size: ___S___M___L

Irritant Smoke ___Pass ___Fail

Isoamyl Acetate ___Pass ___Fail

Examiner _____

Date_____

Employee _____

Date _____

APPENDIX B – FIT TEST WORKSHEETS

QUANTITATIVE RESPIRATOR FIT TEST REPORT

LAST NAME _____

FIRST NAME_____

ID NUMBER_____

NEXT TEST DUE_____

OPERATOR NAME_____

RESPIRATOR MODEL_____

•SIZE_____ •MANUFACTURER_____

•APPROVAL NUMBER_____

NOTES_____

TEST DATE_____

TEST TIME_____

TEST DATA

Fit Factor Pass Level: 100

Ex. Ambient
(Part/cc) Mask
(Part/cc) Fit Factor Pass/Fail
NB
DB
SS
UD
R
NB
OVERALL FIT FACTOR = _____

Operator _____ Date _____

Subject_____ Date _____

OSHA's Respiratory Protection Standard, 29CFR1910.134

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning, and care, and warnings regarding the respirator's limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Personal Protective Equipment Program

Policy:

Protective clothing will be provided whenever it is necessary by reason of hazards, processes or environmental conditions. The Company requires that protective clothing be used when chemical hazards, radiological hazards, or mechanical irritants are encountered in a manner capable of causing injury or impairment through absorption, inhalation, or physical contact.

References

20 CFR 1910.132 Subpart I - Personal Protective Equipment

Responsibilities:

The Safety and Health Manager 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 purchasing the equipment. Input from managers, supervisors, and employees will be obtained and considered in selecting appropriate equipment.

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. Employee owned equipment is not permitted on any job-site.

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 whenever it is necessary due to hazards from processes or in the work environment. To the extent that it is possible and feasible, the company will remove or eliminate hazards or exposures through engineering means to eliminate the need for PPE.

This program covers eye and face protection, head protection, foot protection, hand protection, and electrical protection. Respiratory hazards and hearing hazards are covered by other

programs, but they will also be included in the Hazard Assessment described below. This program covers the responsibilities of managers, supervisors and workers, assessment of hazards, selection and use of personal protective equipment (PPE), and training.

Procedures:

a. Personal protective clothing is to include approved lab coats, surgical caps, masks, gloves, special shirts, trousers, overalls, jumpsuits, safety shoes, hard hats, coats and smocks. As a minimum, Company furnished lab coats should always be worn during laboratory work.

b. Requests for all personal protective clothing not available as Company stock items are generated by the supervisor and are approved by the Safety and Health Manager. The protective clothing must be worn by the employees and visitors as dictated by Company policy. The clothing will be available only in compromise sizes (i.e., small, medium, and large).

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 in laboratory, shop, warehouse, and animal housing areas.

e. Safety shoes should be worn by all shop, warehouse and maintenance personnel as dictated by the nature of the work. Safety shoe areas are recommended by the supervisor and approved by the Safety and health Manager. The user will be responsible for the proper cleaning, maintenance and use of the safety shoes.

f. Specialty footwear (i.e., Blast Boots, Rubber boot covers, Acid Boots) shall not be worn while driving any vehicles. Specialty boots shall be removed and replaced with standard steel toe safety shoes before driving of any vehicle. This includes but is not limited to, service trucks, vacuum trucks, safety vehicles and forklifts. Metatarsal boots shall be worn at all times at facilities that require contractors to do so (i.e.: Steel Mills).

g. 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 Safety and Health Manager decides such hazards exist.

h. SEI Solutions prohibits the use of tinted safety glasses (i.e., indoor/outdoor, safety sunglasses) Clear safety glasses shall be worn at all times while work is performed on any jobsite.

Hazard Assessment:

The Company will perform an assessment of the workplace 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 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 Company will:

- Select, and have each affected employee use, the types of PPE that will protect the employee from the hazards identified in the hazard assessment.
- Communicate equipment selection decisions to each affected employee

Where such hazards are present, or likely to be present, the Company will (continued):

- Select PPE that properly fits each affected employee
- Train employees in the use and care of PPE as described elsewhere in this program

The Company will verify that the workplace hazard assessment has been performed by conducting a written certification. This certification will be dated and signed by the Safety and Health manager 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 company 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 Company will review and update the workplace hazard assessment on an annual basis.

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 by 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 - No national standard - Equipment will be tested electrically before first use and every 6 months thereafter or upon indication that insulating value is suspect.

Payment:

Personal protective equipment (PPE), used to comply with 29 CFR 1910.132 and/or 29 CFR 1926.95, shall be provided by the Company at no cost to employees. Please refer to 29 CFR 1910.132 (h) and/or 29 CFR 1926.95 (d) for specifics.

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 care, maintenance, storage, useful life, and disposal of PPE

Per employee penalties for PPE and training violations: OSHA has issued its final rule allowing OSHA to cite employers on a "per employee basis" for failure to wear/use required personal protective equipment (PPE). This rule went into effect January 12, 2009, and applies to PPE and training. As a result, an employer who has failed to properly train employees or who has employees not wearing or using PPE may receive a citation per employee.

The 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 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 Safety and Health 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. If employee-owned equipment is permitted, the employer must be responsible for the assurances of its adequacy, maintenance & sanitation.

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.

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 Safety and Health 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, hot liquids, and molten metals;
- 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, activities 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 personal glasses, they shall be provided with a suitable eye protector to wear over them.

Eye and Face Protection- (continued)

Specifications-

Eye and face protectors procured, issued to, and used by Company 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.

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

a) 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.

b) 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.

Description and Use of Eye/Face Protectors (continued)

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

Welders 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.

d) 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.

e) 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 Safety and Health Manager maintains a supply of various eye and face protective devices. Personnel requiring prescription safety glasses must contact the Safety and Health Manager.

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.

Hearing Protection-

Hearing protection devices are the first line of defense against noise in environments where engineering controls have not reduced employee exposure to safe levels. Hearing protective devices can prevent significant hearing loss, but only if they are used properly.

The most popular hearing protection devices are earplugs which are inserted into the ear canal to provide a seal against the canal walls. Earmuffs enclose the entire external ears inside rigid cups. The inside of the muff cup is lined with acoustic foam and the perimeter of the cup is fitted with a cushion that seals against the head around the ear by the force of the headband.

Preformed earplugs and earmuffs should be washed periodically and stored in a clean area, and foam inserts should be discarded after each use. It is important for you to wash hands before handling pre-formed earplugs and foam inserts to prevent contaminants from being placed in the ear which may increase your risk of developing infections.

Also, check hearing protective devices for signs of wear or deterioration.

Replace devices periodically.

The Safety and Health Manager maintains a supply of a variety of disposable foam ear inserts and earmuffs.

Respiratory Protection-

Respiratory hazards may occur through exposure to harmful dusts, fogs, fumes, mists, gases, smoke, sprays, and vapors. The best means of protecting personnel is through the use of engineering controls, e.g., local exhaust ventilation. Only when engineering controls are not practical or applicable shall respiratory protective equipment be employed to reduce personnel exposure.

The Safety and Health Manager is responsible for the Respiratory Protection Program at the Company. Workers requiring the use of respirators must first obtain medical approval from the Company physician to wear a respirator before a respirator can be issued. The Safety and Health Manager conducts respirator training and fit tests and is responsible for determining the proper type of respiratory protection required for the particular hazard.

Respiratory Protection- (continued)

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.
- Recognize indications that cartridges and canisters are at their end of service. If in doubt, 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.

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 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 employees and contractors 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, and 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. The Safety and Health Manager can assist is 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.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type 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. To protect the hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock out machines or tools and disconnect the power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machinery, such as drill presses, mills, lathes, and grinders.

Hand Protection- (continued)

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

Safety Shoes-

Safety shoes shall be worn in the shops, warehouses, maintenance, cagewash, glassware, and other areas as determined by the Health and Safety Branch.

Recommendations for safety footwear shall be approved by the Health and Safety Branch. All safety footwear shall comply with American National Standards Institute (ANSI) Standard ANSI Z41-1991, "American National Standard for Personal Protection - Protective Footwear. Protective footwear purchased before July 5, 1994, shall comply with ANSI Standard Z41.1-1967.

Responsibilities-

a. Supervisor - Reviews employees work situation and recommends safety footwear as appropriate in accordance with established Institute policy. Requests safety shoes from the Safety and Health manager for new employees or as indicated for replacement. Ensures that all employees under his supervision use and maintain safety footwear. Makes determination on the need for replacement or repair of safety shoes.

b. Employee - Wears Institute provided or approved safety shoes in all areas requiring safety footwear as determined by the supervisor and the Health and Safety Manager.

c. Health and Safety Manager - Consults with supervisors concerning safety shoe requirements and approves issuance of all safety shoes. Arranges for local purchase of all safety shoes. Makes arrangements for necessary repairs.

Safety Shoes-

Procedures-

a. Supervisors must review employee's work situation in consultation with the Health and Safety Manager to decide the need for safety footwear and appropriate types. The "Request for Safety Shoes" must be completed, reviewed and signed by the supervisor and approved by the Health and Safety Manager.

b. Any employee desiring to replace his/her safety footwear must complete the "Request for Safety Shoes" and have it signed by their supervisor.

c. If an employee is unable to find appropriate safety footwear at the designated vendors, he or she should check with the Health and Safety Manager for alternate procedures. Alternate procedures involve employees purchasing safety footwear with their own funds and being reimbursed.

f. Employee who want to have their footwear repaired, should be encouraged to do so. Some footwear is designed to be repaired, and some is not. Repairs would include such items as new soles and heels. The Company will reimburse employees for repairs.

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 80 dBA sound levels, or
•120 dB peak sound pressure level or greater

Types of Hearing Protective Devices Hearing protective devices include the following:

a. Insert Type Earplugs

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 like 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 airtight 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 Office of Health and Safety. In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 80 dBA or lower.

Issuance of Hearing Protective Devices

The issuance of hearing protective devices is handled through the Safety and Health Manager. The Safety and Health Manager will issue and fit the initial hearing protective devices (foam inserts, disposables). Instruction on the proper use and care of earplugs and earmuffs will be provided whenever HPDs (hearing protective devices) are dispensed. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The Safety and Health Manager will dispense earmuffs when necessary and will maintain a supply of disposable earplugs.

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-circumoral flesh 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 before 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 n use, earmuffs should be placed in open air to allow moisture that may have been absorbed into the cups to evaporate.

Hearing Protection Performance Information

The maximum of sound attenuation one gets when wearing hearing protection devices is limited by human body and bone conduction mechanisms. Even though a particular device may provide outstanding values of noise attenuation the actual noise reductions

may be less because of the noise surrounding the head and body bypasses the hearing protector and is transmitted through tissue and bone pathways to the inner ear.

The term “double hearing protection” is misleading. The attenuation provided from any combination earplug and earmuff is not equal to the sum of their individual attenuation values.

SAFETY SHOE VOUCHER PROGRAM

I. POLICY

It is the policy of SEI Solutions to provide employees with the necessary protective shoes. Occupational Safety and Health Administration (OSHA) regulations require that under various conditions protective footwear is required. To ensure the safety of employees, appropriate metatarsal protective footwear must be worn by all persons when working in areas where there is a danger of foot injuries. These injuries could include crushing from heavy falling or rolling objects, objects piercing the soles, lacerations, and exposure to hot or molten metals.

SEI Solutions offers this program as a benefit to employees to ensure compliance with company and customer compliance requirements.

II. PURPOSE

The purpose of the safety shoe voucher policy is to provide an annual (12 months) voucher for the purchase of metatarsal safety shoes for employees working for various SEI Solutions customers.

III. ELIGIBILITY

Employees are eligible to participate in the voucher program when they meet one of the following categories:

A. When the employee is hired into one or more of the following positions, Laborer, Operator, Safety Services, Field Management. Voucher will be issued during new hire orientation.

B. Employees may receive protective footwear when Account Manager/Supervisor certifies that the current pair of safety shoes is unfit for continued wear. Examples include non-metatarsal safety shoe, exposed steel toe, or repairs to boots beyond manufacturers standards.

C. Under certain conditions, the protective footwear may become damaged beyond normal wear and tear while the employee was performing a specific task, SEI Solutions may authorize a voucher for a replacement pair of protective footwear. Task related damage shall be documented and presented at time of replacement request.

Employees are eligible for one boot voucher every 12 months. Any replacement of metatarsal safety footwear within the year period must be purchased at the expense of the employee unless specified above. At no time, under any circumstance, shall the employee be excused from wearing metatarsal safety footwear when the position requires such.

If an employee is terminated/resign within the probationary period, that employee must reimburse SEI Solutions for the full cost of his/her pair of safety footwear. The department head must notify the Human Resources Department should this action take place.

IV. PROCEDURE

All Employees required to wear safety shoes will be able to purchase (1) one pair of approved metatarsal safety shoes with a company supplied shoe voucher up to a total cost of **$200** per year. Per year is equal to or greater than 12 months from time of employment or previous issued safety shoe voucher.

Employees may choose to purchase a higher-grade approved shoe but will assume all costs above approved dollar amount. Employees who elect to purchase an approved safety shoe less than the approved amount will not receive the difference in pay. Additional shoe/boot accessories (laces, leather treatment, insoles) are not covered by this voucher program. This voucher can only be used at company approved vendors listed below.

Berey Bros.
7121 Indianapolis Blvd.
Hammond, IN 46342
219-844-5400

Employees who choose to purchase metatarsal boots without safety shoe voucher, must provide original receipt to be reimbursed. Original receipt must be presented to their Team Leader or Superintendent to receive reimbursement.

This safety shoe voucher program does not cover non-metatarsal safety shoes, laces, sole inserts, leather treatment and any other accessories. This safety shoe voucher program covers (1) pair of metatarsal safety shoes per occurrence.

V. DEFINITIONS

A. Protective Footwear: Footwear that meets the requirements of the American National Standards Institute standards: ASTM F-2412-2005, ASTM F-2413-2005, ANSI Z41-1999 or ANSI

Z41-1991, ANSI Z41-1991 as referenced by the Occupational Safety and Health Act (OSHA). The work boots may not be cowboy boots, athletic shoes, or hunting boots.

B. Metatarsal Boot: Metatarsal Boots are **a form of personal protective equipment (PPE) specifically toes and feet**. They protect the top of the foot from heavy weights that may cause injuries by heavy items falling, dropping, or rolling onto the top of the foot.

VI. ADDITIONAL CONTACTS

Human Resources

Corporate Safety Department

VII. SCOPE

As of January 16, 2023, this policy replaces and supersedes any previous policies or unwritten policies or practices covering the same subject.

Welding, Cutting, & Hot Work Program

SEI Solutions has adopted this policy for the prevention of employee exposure to hazards resulting either directly or indirectly from —Hot Work (welding, cutting, and brazing) in the workplace from the following OSHA regulations:

§1910.252 – ***General Requirements***

§1910.253 – ***Oxygen-fuel Gas Welding and Cutting***

§1910.254 – ***Arc Welding and Cutting***

SEI Solutions has implemented this policy to ensure that employees are properly trained, aware of hazards associated with hot work, and correctly informed of company policies, practices, and procedures to prevent, or if possible, eliminate these hazards. The Safety Director is the supervisor responsible for ensuring the following engineering controls, work practices, and safety procedures are enforced:

- The Safety Director will ensure that welders, cutters, and their supervisors involved in the performance of hot work operations is properly trained in the safe operations of any equipment required, the safe use of the process, proper PPE, and safety procedures which will be followed.
- Before cutting or welding processes are permitted, the area will be inspected and cleared by the site supervisor before authorization to proceed is granted. Written —Hot Work‖ permits will be utilized to ensure appropriate safe work practices are observed.
- Operators will report any equipment defect or safety hazard to his supervisor and the use of the equipment will be discontinued until its safety has been assured. Repairs will be performed only by qualified personnel.
- Where possible, all hot work operations will be performed outside of buildings or structures, clear of any foreseeable fire hazards. If the object to be welded or cut cannot readily be moved, all moveable fire hazards will be removed.
- Where hot work must be performed indoors or in the vicinity of fire hazards, the area will be cleared, if possible, of any and all material and equipment which may present a hazard of fire or explosion from flame, sparks, arcs, or slag.
- Where fire hazards exist in the area of hot work operations which cannot be removed, they will be guarded to prevent fire, and the hot work operation will be shielded to confine the heat sparks and slag and to protect the immovable fire hazards and prevent hot materials from falling to a lower level.
- Fire watchers will have fire extinguishers readily available. A fire watch will be maintained for at least a half hour after the welding or cutting operation is completed to prevent or extinguish any fire resulting from these operations.
- The employee(s) assigned to fire watch will be trained in the proper use of fire

extinguishers and fire prevention measures, ensure that appropriate firefighting equipment and fire extinguishers are readily available, and be responsible for sounding of fire alarms in the event of a fire which is not readily extinguishable.

- All arc welding operations in occupied areas will be screened to prevent other personnel from being exposed to flash hazards.
- SEI Solutions will be responsible for inspecting work areas prior to any hot work being performed, designate precautions to be followed prior to work commencing, and assign a fire watch where advisable or required when any of the following conditions exist:
    - Locations where other than a minor fire might develop.
    - Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation.
    - Appreciable combustibles are more than 35 feet away but are easily ignited by sparks.
    - Wall or floor openings within a 35-foot radius that expose combustible material in adjacent areas including concealed spaces in walls or floors.
    - Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.
- If the requirements for fire hazards and guarding as stated above cannot be fully met, SEI Solutions. personnel will not perform the welding and cutting operations until hazardous conditions are fully resolved.
- Any hot work to be performed in confined spaces will conform to Permit-required Confined Space procedures and the following requirements:
    - Adequate ventilation is a prerequisite to work in confined spaces.
    - When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines will kept outside of the space. Before operations are started, gas cylinders will be secured, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement, and warning signs will be posted.
    - Where a welder must enter a confined space through a manhole or other small opening, means will be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they will be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.
    - When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes will be removed from the holders and the holders stored so that accidental contact cannot occur and the machine disconnected from the power source.
    - In order to eliminate the possibility of gas escaping through leaks of improperly closed valves when gas welding or cutting, the torch valves will be closed and the

fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area, whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose will also be removed from the confined space.

- Any welding or brazing materials used in hot work which might possibly generate hazardous fumes, gases, or dust to the metals involved will be suitably labeled to indicated the hazard, and appropriate measures for ventilation or respiratory protection provided to ensure that no employee is exposed to higher than permissible levels of hazardous fumes.
- Welding, cutting, or burning of metals containing lead, zinc, cadmium, mercury, beryllium, or other exotic metals, paints, coatings, or preservatives will require that regulation ventilation or respiratory protection be utilized.
- After welding or cutting operations are completed, the welder will mark the hot metal or provide some other means of warning other workers.
- First aid kits and equipment are always readily available for employee use during welding and cutting operations. First aid kits are kept in supervisor company vehicles and are regularly inspected by the Safety Director to ensure that contents are kept fully stocked and that the appropriate items are available.
- Personnel in charge of fuel-gas and oxygen supply equipment (including distribution piping systems and generators) will be fully instructed and determined competent for handling, use, and storage of compressed gas cylinders and related equipment.
- The manufacturer recommendations covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems will be followed and readily available to employees.
- Fuel gas and oxygen cylinders must be transported, moved, stored, and used in an upright position, secured to prevent tipping, and located to prevent accidental collision with the cylinders. Cylinders must be kept away from any heat or combustion sources, and at least 20 feet from any flammable gases or petroleum products. When not in use, cylinders must have their valves closed, any regulators or attachments removed, and their valve covers in place.
- Personnel assigned to operate or maintain arc welding equipment will be properly trained & qualified to operate such equipment and in safety procedures and familiar with OSHA §1910.252(a)(b) & (c) and §1910.254 requirements for arc welding and equipment handling to include the following areas:
    - Machines hook up.
    - Grounding.
    - Electric shock.
    - Switches.
    - Manufacturers`instructions.
    - Electrode holders.

  - There shall be no leaks of cooling water, shielding gas or engine fuel.
- If gas shielded arc welding operations are being performed, operators will be familiar with the American Welding Society Standard A6-1-1966.
- Machines which have become wet will be thoroughly dried and tested before being used.
- Cables with damaged insulation or exposed bare conductors will be replaced. Joining lengths of work and electrode cables will be done using connecting means specifically intended for the purpose. The connecting means will have insulation adequate for the service conditions.
- The operator should report any equipment defect or safety hazard to his/her supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel.

The above policies and procedures will be enforced at SEI Solutions and in addition, all requirements of the OSHA Standards will be adhered to.

Heat Stress Program

Policy:

Company employees work in a wide variety of high temperature environments. Being uncomfortable is not the major problem with working in high temperatures and humidity. Employees who are suddenly required to work in a hot environment face additional, and generally avoidable, hazards to their individual safety and health. The Occupational Safety and Health Act requires the Company to provide appropriate training to employees on preventive measures and adequate protection necessary to prevent heat stress.

Workers who perform hazardous jobs while exposed to temperatures greater than 79^{o} F are known to have high accident rates and suffer from heat stress. Intensive physical activity in high temperature environments results in higher perspiration and heart rates. Long-term exposure of non-acclimatized persons to heat stress is unhealthy and counterproductive. Acclimatizing and educating employees to work in high temperatures, together with effective engineering control of heat sources, will provide a safe and healthy work environment for the Company's workforce.

When possible, the Company will schedule heavy tasks and work requiring protective gear for cooler, morning or evening hours. Prolonged, extreme hot temperatures mandate the postponement of nonessential tasks.

How the Body Handles Heat:

The human body, being warm blooded, maintains a fairly constant internal temperature, even though it is being exposed to varying environmental temperatures. To keep internal body temperatures within safe limits, the body must get rid of its excess heat, primarily through varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by the sweat glands. These automatic responses usually occur when the temperature of the blood exceeds 98.6^{o}F and are kept in balance and controlled by the brain. In this process of lowering internal body temperature, the heart begins to pump more blood, blood vessels expand to accommodate the increased flow, and the microscopic blood vessels (capillaries) which thread through the upper layers of the skin begin to fill with blood. The blood circulates closer to the surface of the skin, and the excess heat is lost to the cooler environment.

If heat loss from increased blood circulation through the skin is not adequate, the brain continues to sense overheating and signals the sweat glands in the skin to shed large quantities of sweat onto the skin surface. Evaporation of sweat cools the skin, eliminating large quantities of heat from the body.

As environmental temperatures approach normal skin temperature, cooling of the body becomes more difficult. If air temperature is as warm as or warmer than the skin, blood brought to the body surface cannot lose its heat. Under these conditions, the heart continues to pump blood to the body surface, the sweat glands pour liquids containing electrolytes onto the surface of the skin.

The evaporation of the sweat becomes the principal effective means of maintaining a constant body temperature. Sweating does not cool the body unless the moisture is removed from the skin by evaporation. Under conditions of high humidity, the evaporation of sweat from the skin is decreased and the body's efforts to maintain an acceptable body temperature may be significantly impaired. These conditions adversely affect an individual's ability to work in the hot environment. With so much blood going to the external surface of the body, relatively less goes to the active muscles, the brain, and other internal organs; strength declines; and fatigue occurs sooner than it would otherwise. Alertness and mental capacity also may be affected. Workers who must perform delicate or detailed work may find their accuracy suffering, and others may find their comprehension and retention of information lowered.

Safety Problems:

Certain safety problems are common to hot environments. Heat tends to promote accidents due to the slipperiness of sweaty palms, dizziness, or the fogging of safety glasses. Wherever there exists molten metal hot surfaces, steam, etc., the possibility of burns from accidental contact also exists.

Aside from these obvious dangers, the frequency of accidents, in general appears to be higher in hot environments than in more moderate environmental conditions. One reason is that working in a hot environment lowers the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort promote irritability, anger, and other emotional states which sometimes cause workers to overlook safety procedures or to divert attention from hazardous tasks.

Health Problems:

Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders:

- **Heat Stroke**

Heat stroke is the most serious of health problems associated with working in hot environments. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. The body's only effective means of removing excess heat is compromised with little warning to the victim that a crisis stage has been reached.

A heat stroke victim's skin is hot, usually dry, red or spotted. Body temperature is usually 105ºF or higher, and the victim is mentally confused, delirious, perhaps in convulsions, or unconscious. Unless the victim receives quick and appropriate treatment, death can occur.

Any person with signs or symptoms of heat stroke requires immediate hospitalization. However, first aid should be immediately administered. This includes removing the victim to a cool area, thoroughly soaking the clothing with water, and vigorously fanning the body to increase cooling. Further treatment at a medical facility should be directed to the continuation of the cooling process and the monitoring of complications which often accompany the heat stroke. Early recognition and treatment of heat stroke are the only means of preventing permanent brain damage or death.

Heat stroke first aid:

- Move the victim to a cool place. Remove heavy clothing; light clothing can be left in place.
- Immediately cool the victim by any available means. Such as placing ice packs at areas with abundant blood supply (neck, armpits, and groin). Wet towels or sheets are also effective. The cloths should be kept wet with cool water.
- To prevent hypothermia continue cooling the victim until their temperature drops to 102 degrees Fahrenheit.
- Keep the victim's head and shoulders slightly elevated.
- Seek medical attention immediately. All heat stroke victims need hospitalization.
- Care for seizures if they occur.
- Do not use aspirin or acetaminophen.

- **Heat Exhaustion**

Heat exhaustion includes several clinical disorders having symptoms which may resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of fluid by sweating, sometimes with excessive loss of salt. A worker suffering from heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea, or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal or only slightly elevated.

In most cases, treatment involves having the victim rest in a cool place and drink plenty of liquids. Victims with mild cases of heat exhaustion usually recover spontaneously with this treatment. Those with severe cases may require extended care for several days. There are no known permanent effects.

***CAUTION: Persons with heart problems or those on a low sodium diet who work in hot environments should consult a physician about what to do under these conditions*.**

Heat exhaustion first aid:

- Move the victim to a cool place.
- Keep the victim lying down with legs straight and elevated 8-12 inches.

- Cool the victim by applying cold packs or wet towels or cloths. Fan the victim.
- Give the victim cold water if he or she is fully conscious.
- If no improvement is noted within 30 minutes, seek medical attention.

- **Heat Cramps**

Heat cramps are painful spasms of the muscles that occur among those who sweat profusely in heat, drink large quantities of water, but do not adequately replace the body's salt loss. The drinking of large quantities of water tends to dilute the body's fluids, while the body continues to lose salt. Shortly thereafter, the low salt level in the muscles causes painful cramps. The affected muscles may be part of the arms, legs, or abdomen, but tired muscles (those used in performing the work) are usually the ones most susceptible to cramps. Cramps may occur during or after work hours and may be relived by taking salted liquids by mouth.

CAUTION: Persons with heart problems or those on a low low sodium **diet who work in hot environments should consult a physician about what to do under these conditions.**

- **Fainting**

A worker who is not accustomed to hot environments and who stands erect and immobile in the heat may faint. With enlarged blood vessels in the skin and in the lower part of the body due to the body's attempts to control internal temperature, blood may pool there rather than return to the heart to be pumped to the brain. Upon lying down, the worker should soon recover. By moving around, and thereby preventing blood from pooling, the patient can prevent further fainting.

- **Heat Rash**

Heat rash, also known as prickly heat, is likely to occur in hot, humid environments where sweat is not easily removed from the surface of the skin by evaporation and the skin remains wet most of the time. The sweat ducts become plugged, and a skin rash soon appears. When the rash is extensive or when it is complicated by infection, prickly heat can be very uncomfortable and may reduce a worker's performance. The worker can prevent this condition by resting in a cool place part of each day and by regularly bathing and drying the skin.

- **Transient Heat Fatigue**

Transient heat fatigue refers to the temporary state of discomfort and mental or psychologic strain arising from prolonged heat exposure. Workers unaccustomed to the heat are particularly susceptible and can suffer, to varying degrees, a decline in task performance, coordination, alertness, and vigilance. The severity of transient heat fatigue will be lessened by a period of gradual adjustment to the hot environment (heat acclimatization).

<u>Preparing for the Heat:</u>

One of the best ways to reduce heat stress on workers is to minimize heat in the workplace. However, there are some work environments where heat production is difficult to control, such as when furnaces

or sources of steam or water are present in the work area or when the workplace itself is outdoors and exposed to varying warm weather conditions.

Humans are, to a large extent, capable of adjusting to the heat. This adjustment to heat, under normal circumstances, usually takes about 5 to 7 days, during which time the body will undergo a series of changes that will make continued exposure to heat more endurable.

On the first day of work in a hot environment, the body temperature, pulse rate, and general discomfort will be higher. With each succeeding daily exposure, all of these responses will gradually decrease, while the sweat rate will increase. When the body becomes acclimated to the heat, the worker will find it possible to perform work with less strain and distress.
Gradual exposure to heat gives the body time to become accustomed to higher environmental temperatures. Heat disorders in general are more likely to occur among workers who have not been given time to adjust to working in the heat or among workers who have been away from hot environments and who have gotten accustomed to lower temperatures. Hot weather conditions of the summer are likely to affect the worker who is not acclimatized to heat. Likewise, workers who return to work after a leisurely vacation or extended illness may be affected by the heat in the work environment. Whenever such circumstances occur, the worker should be gradually reacclimatized to the hot environment.

Lessening Stressful Conditions:

Many industries have attempted to reduce the hazards of heat stress by introducing engineering controls, training workers in the recognition and prevention of heat stress, and implementing work-rest cycles. Heat stress depends, in part, on the amount of heat the worker's body produces while a job is being performed. The amount of heat produced during hard, steady work is much higher than that produced during intermittent or light work. Therefore, one way of reducing the potential for heat stress is to make the job easier or lessen its duration by providing adequate rest time. Mechanization of work procedures can often make it possible to isolate workers from the heat sources (perhaps in an air-conditioned booth) and increase overall productivity by decreasing the time needed for rest. Another approach to reducing the level of heat stress is the use of engineering controls which include ventilation and heat shielding.

Number and Duration of Exposures:

Rather than be exposed to heat for extended periods of time during the course of a job, workers should, wherever possible, be permitted to distribute the workload evenly over the day and incorporate work-rest cycles. Work-rest cycles give the body an opportunity to get rid of excess heat, slow down the production of internal body heat, and provide greater blood flow to the skin.

Workers employed outdoors are especially subject to weather changes. A hot spell or a rise in humidity can create overly stressful conditions. The following practices can help to reduce heat stress:

- Postponement of nonessential tasks,
- Permit only those workers acclimatized to heat to perform the more strenuous tasks, or
- Provide additional workers to perform the tasks keeping in mind that all workers should have the physical capacity to perform the task and that they should be accustomed to the heat.

Thermal Conditions in the Workplace:

A variety of engineering controls can be introduced to minimize exposure to heat. For instance, improving the insulation on a furnace wall can reduce its surface temperature and the temperature of the area around it. In a laundry room, exhaust hoods installed over those sources releasing moisture will lower the humidity in the work area. In general the simplest and least expensive methods of reducing heat and humidity can be accomplished by:

- Opening windows in hot work areas,
- Using fans, or
- Using other methods of creating airflow such as exhaust ventilation or air blowers.

Rest Areas:

Providing cool rest areas in hot work environments considerably reduces the stress of working in those environments. There is no conclusive information available on the ideal temperature for a rest area. However, a rest area with a temperature near 76/F appears to be adequate and may even feel chilly to a hot, sweating worker, until acclimated to the cooler environment. The rest area should be as close to the workplace as possible. Individual work periods should not be lengthened in favor of prolonged rest periods. Shorter but frequent work-rest cycles are the greatest benefit to the worker.

Drinking Water:

In the course of a day's work in the heat, a worker may produce as much as 2 to 3 gallons of sweat. Because so many heat disorders involve excessive dehydration of the body, it is essential that water intake during the workday be about equal to the amount of sweat produced. Most workers exposed to hot conditions drink less fluids than needed because of an insufficient thirst drive. A worker, therefore, should not depend on thirst to signal when and how much to drink. Instead, the worker should drink one 8 oz cup of fluids every 15 to 20 minutes to replenish the necessary fluids in the body. There is no optimum temperature of drinking water, but most people tend not to drink warm or very cold fluids as readily as they will cool ones. Whatever the temperature of the water, it must be palatable and readily available to the worker. Individual drinking cups should be provided--never use a common drinking cup.

Heat acclimatized workers lose much less salt in their sweat than do workers who are not adjusted to the heat. The average American diet contains sufficient salt for acclimatized workers even when sweat

production is high. If, for some reason, salt replacement is required, the best way to compensate for the loss is to add a little extra salt to the food. Salt tablets **should not** be used.

CAUTION: Persons with heart problems or those on a low sodium diet who work in hot environments should consult a physician about what to do under these conditions.

Protective Clothing:

Clothing inhibits the transfer of heat between the body and the surrounding environment. Therefore, in hot jobs where the air temperature is lower than skin temperature, wearing clothing reduces the body's ability to lose heat into the air. When air temperature is higher than skin temperature, clothing helps to prevent the transfer of heat from the air to the body. However, this advantage may be nullified if the clothes interfere with the evaporation of sweat.

In dry climates, adequate evaporation of sweat is seldom a problem. In a dry work environment with very high air temperatures, protective clothing could be an advantage to the worker. The proper type of clothing depends on the specific circumstance. Certain work in hot environments may require insulated gloves, insulated suits, reflective clothing, or infrared reflecting face shields. For extremely hot conditions, thermally conditioned clothing is available. One such garment carries a self-contained air conditioner in a backpack, while another is connected a compressed air source which feeds cool air into the jacket or coveralls through a vortex tube. Another type of garment is a plastic jacket which has pockets that can be filled with dry ice or containers of ice.

Awareness is Important:

The key to preventing excessive heat stress is educating the Company and worker on the hazards of working in heat and the benefits of implementing proper controls and work practices. The Company shall establish a program designed to acclimatize workers who must be exposed to hot environments and provide necessary work-rest cycles and water to minimize heat stress.

Special Considerations during Prolonged Heat Spells:

During unusually hot weather conditions lasting longer than 2 days, the number of heat illnesses usually increases. This is due to several factors, such as progressive body fluid deficit, loss of appetite (and possible salt deficit), buildup of heat in living and work areas, and breakdown of air-conditioning equipment. Therefore, it is advisable to make a special effort to adhere rigorously to the above preventive measures during these extended hot spells and to avoid any unnecessary or unusual stressful activity. Sufficient sleep and good nutrition are important for maintaining a high level of heat tolerance. Workers who may be at a greater risk of heat illnesses are the obese, the chronically ill, and older individuals.

When feasible, the most stressful tasks should be performed during the cooler parts of the day (early morning or at night). Double shifts and overtime should be avoided whenever possible. Rest periods should be extended to alleviate the increase in the body heat load.

The consumption of alcoholic beverages during prolonged periods of heat can cause additional dehydration. Persons taking certain medications (e.g., medications for blood pressure control, diuretics, or water pills) should consult their physicians in order to determine if any side effects could occur during excessive heat exposure. Daily fluid intake must be sufficient to prevent significant weight loss during the workday and over the workweek

3.11
Scaffold Safety Program

Policy:

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

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision of an authorized competent person and will have guardrails and toe-boards installed. When scaffolding hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and proper training regarding Scaffolds will be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

Purpose:

Falls are a leading cause of traumatic occupational death. The U.S. Department of Labor indicates that falls accounted for 8% of all occupational fatalities from trauma. Personal fall protection equipment was used in several of these incidents, but it was used improperly in each case. In several incidents, workers fell out of their improperly fastened safety belt or in the other incidents, excessively long lanyards broke or separated after victims fell 30 feet.

SEI Solutions LLC. developed this written program to establish safety guidelines designed to protect all employees whom either work on scaffolding or are exposed to scaffolding hazards. This includes safe work practices for the erection, inspection, use of, and dismantling of scaffolds; hazard identification, training requirements, and regulatory compliance.

Responsibilities:

It is the responsibility of each manager, supervisor, and employee to ensure implementation of SEI Solutions safety policy and procedure on Scaffolds. It is

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also the responsibility of each employee to report immediately any unsafe act or condition to his or her supervisor.

Superintendents/Supervisors
Supervisors of all employees that are required to work from scaffolds will ensure the following procedures are taken:

1. Comply with the current and proposed OSHA regulations for working with scaffolds.
2. Communicate appropriate needs to managers/unit heads and/or supervisors.
3. Inspect all scaffolds, scaffold components, and personal fall protection equipment before each use. Any scaffolds, scaffold components, or personal fall protection equipment found to have defects will be tagged out of services by a competent person. All employees will not use scaffolds, scaffold components, or personal fall protection equipment that has been tag out of service. Out of services tags will be red and identify any defects found, including the person making the inspection. Any tagging out procedure required by the host facility will replace this one. The host facilities procedure will be communicated to our employees by the Project Supervisor.
4. Ensure that a competent person is in charge of scaffold erection and inspection according to OSHA 29 CFR 1926.451(f)(3)
5. Use structurally sound portion of buildings or other structures to anchor personal fall protection systems.

Competent Person;

The competent person will oversee the scaffold selection, erection, use, movement, alteration, dismantling, maintenance, and inspection. The competent person will be knowledgeable about proper selection, care, and use of the fall protection equipment. Additionally, the competent person shall assess hazards.

The competent person must have had specific training in and be knowledgeable about the structural integrity of scaffolds and the degree of maintenance needed to maintain them. The competent person must also be able to evaluate the effects of occurrences such as a dropped load, or a truck backing into a support leg that could damage a scaffold. In addition, the competent person must be knowledgeable about the requirements of this standard. A competent person must

have training or knowledge in these areas in order to identify and correct hazards encountered in scaffold work.

Scaffold Users shall;
Scaffolding users shall comply with all applicable guidelines contained in this safety policy and procedure. Scaffolding users will report damaged scaffolds, accessories, and missing or lost components. Scaffolding users will assist with inspections as requested and will not work on a platform until it has been inspected by a competent person before

Wear a body harness which may include a deceleration device, lifeline, or suitable combinations. The body harness shall be rigged so that an employee can neither free fall more than 4 feet nor contact any lower level and bring an employee to a complete stop and limit the maximum deceleration distance an employee travels to 3.5 feet

The use of body belts for fall arrest is prohibited

Safety Department;
The Safety Department will provide prompt assistance to managers/unit heads, supervisors, or others as necessary on any matter concerning this safety policy and procedure. The Safety Department will assist in developing or securing required training.

General Scaffold Requirements:

Supervisors and employees will insure that the following operating procedures are observed:

- Scaffolds must be substantially constructed to carry the loads imposed upon them and to provide a safe work platform. All scaffolds more than 4 'high must have approved guardrails on all ends exposed ends and sides.
- Guardrails, mid-rails, and toe boards must be installed on all open sides of scaffolds 4' high or more in height.

- Only approved scaffolds will be used. Ladders and other devices shall not be used to increase working heights on scaffold platforms. Barrels, boxes, rebar. Or other make-shift substitutes for scaffolds is strictly prohibited.
- Scaffold planks must be cleated together and must extend over the end supports at least 6 inches, but not more than 12 inches.
- All scaffold planks must be visually inspected before each use. Damaged scaffold planks must be removed from service immediately.
- All scaffold planks must be at least two planks wide: No employee may work from a single plank.
- Adequate mud sills or other rigid footing, capable of withstanding the maximum intended load, must be provided.
- Scaffolds must be tied to the building or structure at intervals which do not exceed 30 feet horizontally and 26 feet vertically.
- Do not overload scaffolds. Materials should be brought up as needed. Scaffolds must not be loaded in excess of one-fourth of their rated capability.
- Scaffolds shall be provided with a screen between the toe-board and guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard wire one-half inch mesh or the equivalent, when personnel are required to work or pass underneath the scaffolds.
- Overhead protection is required if employees working on scaffolds are exposed to overhead hazards. Such protection must be a 2” thick plank or equivalent.
- A safe distance from energized power lines shall be maintained.
- Diagonal bracing must be used on all support components.
- Midrails 1” X 6” or equivalent must be present on all sides.
- Ladders will be used as a means of entry onto and exit off of the scaffold.
- Loose materials, debris, and/or tools shall not be accumulated on scaffold platform to cause a hazard.

Rolling Scaffolds- General Requirements:

- The height of the rolling scaffold must not exceed four times the minimum base dimension.
- The work platform must be planked tight for the full width of the scaffold. Cleat the underside of the planks to prevent their movement.
- Casters and wheel stems shall be pinned or otherwise secured in scaffold legs. Casters and wheels must be positively locked if in a stationary position.
- Get help when moving rolling scaffolds. Make certain that the route is clear. Watch for holes and overhead obstructions.
- No one shall be permitted to ride on rolling scaffolds.

Two Point Suspended Scaffolds (Swinging Stages) General Requirements:

- Each employee working from a two-point suspended scaffold must be tied off to an independent safety line.
- Suspended scaffolds must be not less than 20 inches nor more than 36 inches wide.
- Wire ropes used to suspend such scaffolds must be able to withstand a load that is six times the load it is intended to support.
- Non–conductive insulating material must be placed over suspension cables of each scaffold for protection when the chance of contact with an electric arc exists.

Hazard Evaluation and Control;

Scaffolds and Scaffold components shall be inspected for visible defects by a competent person before each work shift and after any occurrence which could affect a scaffold's structural integrity. -OSHA 29 CFR 1926.451(f)(3)

Employees will be monitored for safe work practice by their supervisors and EH&S while using scaffolding.

Training;

Affected employees will receive instruction on the particular types of scaffolds which they are to use. Training should focus on proper erection, handling, use, inspection, and care of the scaffolds. Training must also include the installation of fall protection, guardrails, and the proper use and care of fall arrest equipment.

This training should be done upon initial job assignment. Retraining shall be done when job conditions change. Periodic refresher training shall be done at the discretion of the supervisor.

Training Requirements for Scaffold Users;

This training is to be conducted by a qualified person who:

- Is qualified in the subject matter
- Can recognize hazards;
- Understands the procedures to control or minimize the hazards

Training shall include:

1. The nature of any:
    - Electrical Hazards;
    - Fall Hazards; and
    - Falling object hazards.
2. The correct procedures for:
    - Dealing with electrical hazards;

- Erecting, maintaining, and disassembling fall protection systems;
- Erecting, maintaining, and disassembling falling object protection systems;

3. The proper:
    - Use of the scaffold;
    - Handling of materials on the scaffold
4. The maximum intended load and the load carrying capacity of the scaffold.
5. Any other pertinent parts of OSHA 29 CFR 1926 Subpart L.

Ladder Safety

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 has cause a large percentage of accidents in the workplace are of accidents. 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 Company 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 following loads without failure:

(i) Each self-supporting portable ladder: At least four times the maximum intended load, except that each extra-heavy-duty type 1A metal or plastic ladder shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction.

(ii) Each portable ladder that is not self-supporting: At least four times the maximum intended load, except that each extra-heavy- duty type 1A metal or plastic ladders shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction when the ladder is placed at an angle of 75½ degrees from the horizontal.

(iii) Each fixed ladder: At least two loads of 250 pounds (114 kg) each, concentrated between any two consecutive attachments (the number and position of additional concentrated loads of 250 pounds (114 kg) each, determined from anticipated usage of the ladder, shall also be included), plus anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from the use of ladder safety devices. Each step or rung shall be capable of supporting a single concentrated load of at least 250 pounds (114 kg) applied in the middle of the step or rung.

(2) Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.

(3)

(i) Rungs, cleats, and steps of portable ladders (except as provided below) and fixed adders (including individual rung/step ladders) shall be spaced not less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, as measured between center lines of the rungs, cleats and steps.

(ii) 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.

(iii) Rungs, cleats, and steps of the base section of extension trestle ladders shall be not less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, as measured between center lines of the rungs, cleats, and steps. The rung spacing on the extension section of the extension trestle ladder shall be not less than 6 inches (15 cm) nor more than 12 inches (31 cm), as measured between center lines of the rungs, cleats and steps.

(4)

(i) The minimum clear distance between the sides of individual-rung/step ladders and the minimum clear distance between the side rails of other fixed ladders shall be 16 inches (41 cm).

(ii) The minimum clear distance between side rails for all portable ladders shall be 11½ inches (29 cm).

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

(6)

(i) The rungs and steps of fixed metal ladders manufactured after March 15, 1991, shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.

(ii) The rungs and steps of portable metal ladders shall be corrugated, knurled, dimpled, coated with skid-resistant material, or other-wise treated to minimize slipping.

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

(8) 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.

(9) When splicing is required to obtain a given length of side rail, the resulting side rail must be at least equivalent in strength to a one-piece side rail made of the same material.

(10) 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.

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

(12) 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.

(13) The minimum perpendicular clearance between fixed ladder rungs, cleats, and steps, and any obstruction behind the ladder shall be 7 inches (18 cm), except in the case of an elevator pit ladder, for which a minimum perpendicular clearance of 4½ inches (11 cm) is required.

(14) The minimum perpendicular clearance between the center line of fixed ladder rungs, cleats, and steps, and any obstruction on the climbing side of the ladder shall be 30 inches (76 cm), except as provided in paragraph (a)(15) of this section.

(15) When unavoidable obstructions are encountered, the minimum perpendicular clearance between the centerline of fixed ladder rungs, cleats, and steps, and the obstruction on the climbing side of the ladder may be reduced to 24 inches (61 cm), provided that a deflection device is installed to guide employees around the
obstruction.

(16) Through fixed ladders at their point of access/egress shall have a step-across distance of not less than 7 inches (18 cm) nor more than 12 inches (30 cm) as measured from the centerline of the steps or rungs to the nearest edge of the landing area. If the normal step-across distance exceeds 12 inches (30 cm), a landing platform shall be provided to reduce the distance to the specified limit.

(17) Fixed ladders without cages or wells shall have a clear width to the nearest permanent object of at least 15 inches (38 cm) on each side of the centerline of the ladder.

(18) 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.

(19) 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

(iii) A cage or well, and multiple ladder sections, each ladder section not to exceed 50 feet (15.2 m) in length. Ladder sections shall be offset from adjacent sections, and landing platforms shall be provided at maximum intervals of 50 feet (15.2 m).

(20) Cages for fixed ladders shall conform to all of the following:

(i) Horizontal bands shall be fastened to the side rails of rail ladders, or directly to the structure, building, or equipment for individual- rung ladders;

(ii) Vertical bars shall be on the inside of the horizontal bands and shall be fastened to them;

(iii) Cages shall extend not less than 27 inches (68 cm), or more than 30 inches (76 cm) from the centerline of the step or rung (excluding the flare at the bottom of the cage), and shall not be less than 27 inches (68 cm) in width;

(iv) The inside of the cage shall be clear of projections;

(v) Horizontal bands shall be spaced not more than 4 feet (1.2 m) on center vertically;

(vi) Vertical bars shall be spaced at intervals not more than 9½ inches (24 cm) on center horizontally;

(vii) The bottom of the cage shall be at a level not less than 7 feet (2.1 m) nor more cage shall be flared not less than 4 inches (10 cm) all around within the distance between the bottom horizontal band and the next higher band;

(viii) The top of the cage shall be a minimum of 42 inches (1.1 m) above the top of the platform, or the point of access at the top of the ladder, with provision for access to the platform or other point of access.

(21) 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) Their inside face on the climbing side of the ladder shall extend not less than 27 inches (68 cm) nor more than 30 inches (76 cm) from the centerline of the step or rung;

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

(v) The bottom of the wall on the access side shall start at a level not less than 7 feet (2.1 m) nor more than 8 feet (2.4 m) above the point of access to the bottom of the ladder.

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

(i) 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;

(ii) 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;
(iii) 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;
(iv) 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.

(23) The mounting of ladder safety devices for fixed ladders shall conform to the following:
(i) Mountings for rigid carriers shall be attached at each of the carrier, with intermediate mountings, as necessary, spaced along the entire length of the carrier, to provide the strength necessary to stop employees' falls.
(ii) Mountings for flexible carriers shall be attached at each end of the carrier. When the system is exposed to wind, cable guides for flexible carriers shall be installed at a minimum spacing of 25 feet (7.6 m) and maximum spacing of 40 feet (12.2 m) along the entire length of the carrier, to prevent wind damage to the system.
(iii) The design and installation of mountings and cable guides shall not reduce the design strength of the ladder.
(24) The side rails of through or side-step fixed ladders shall extend 42 inches (1.1 m) above the top of the access level or landing platform served by the ladder. For a parapet ladder, the access level shall be the roof if the parapet is cut to permit passage through the parapet; if the parapet is continuous, the access level shall be the top of the parapet.
(25) For through-fixed-ladder extensions, the steps or rungs shall be omitted from the extension and the extension of the side rails shall be flared to provide not less than 24 inches (61 cm) nor more than 30 inches (76 cm) clearance between side rails. Where ladder safety devices are provided, the maximum clearance between side rails of the extensions shall not exceed 36 inches (91 cm).
(26) For side-step fixed ladders, the side rails and the steps or rungs shall be continuous in the extension.
(27) Individual-rung/step ladders, except those used where their access openings are covered with manhole covers or hatches, shall extend at least 42 inches (1.1 m) above an access level or landing platform either by the continuation of the rung spacings as horizontal grab bars or by providing vertical grab bars that shall have the same lateral spacing as the vertical legs of the rungs.

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 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, nor beyond their manufacturer's rated capacity.

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

(5)

(i) Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).

(ii) Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.

(iii) 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.

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

(7) 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.

(8) 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.

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

(10) 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.

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

(12) Ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized electrical equipment.

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

(14) Cross-bracing on the rear section of stepladders shall not be used for climbing unless
the ladders are designed and provided with steps for climbing on both front and rear sections.

(15) 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.
(16) 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.
(17) Fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, or corroded components, 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.
(ii) Marked in a manner that readily identifies it as defective;
(iii) Or blocked (such as with a plywood attachment that spans several rungs).

(18) Ladder repairs shall restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
(19) Single-rail ladders shall not be used.
(20) When ascending or descending a ladder, the user shall face the ladder
(21) Employees will always maintain at least three points of contact with the ladder at all times.
(22) An employee shall not carry any object or load that could cause the employee to lose balance and fall.

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.
h) Rungs or steps on metal ladders that are not corrugated, knurled, or dimpled will have skid-resistant materials applied.

3.13
Housekeeping & Material Storage

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 company fire prevention and accident prevention program.

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 inside buildings and/or within 50 feet of material storage. This includes all offices, rest rooms, locker rooms, production floor, storage areas, coolers, etc. Smoking is permitted outside in designated areas and in the Smoking Section of authorized break areas before work, after work and during breaks. To prevent fires and keep the grounds neat and orderly, all cigarette/cigar ashes and butts are to be disposed in the provided butt cans or ash-trays only.

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, fire extinguishers, etc., will always be kept clear (a minimum of three feet of either side) of material storage (temporary and permanent) .

2. Storage areas will always be maintained orderly . 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 wastes.

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 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 cafeteria 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 (fireworks, explosives, gasoline, etc.) may not store in lockers or brought on company property.

3. Personal food item will not be stored in lockers or cafeteria 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.

Maintenance Areas:

1. All aisles, emergency exits, fire extinguishers, etc., will always be kept clear (a minimum of three feet of either side) of material storage (temporary and permanent) .

2. Storage Areas will always be maintained orderly :

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 flammables stored in OSHA-approved Fire Cabinets and self-closing cans where necessary

3. Spills will be cleaned-up immediately by the person responsible and wastes disposed properly.

4. All refuse and waste materials will be placed in the recognized waste containers for disposal.

Grounds:

The grounds surrounding the Company are an extension of the work place. Grounds that are kept neat and orderly show pride by the Company for Employees, customers and neighbors 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 Maintenance Department will be responsible for grounds keeping (mowing, trimming, etc.) as needed. Maintenance will also establish procedures for ice/snow removal, when necessary, prior to operations each day.

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 to walls or sprinkler heads. 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, fork lifts, 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.

Flammable Storage

1. All flammables will be stored in OSHA-approved flammable storage cabinets or stored outside (at least 50 feet from any structure)

2. Fuels, solvents and other flammables (not stored in original shipping containers) will be stored in OSHA-approved self-closing containers with flame arresters. Flammables may not be stored in open containers (open parts baths, etc.).

3. Flammable storage areas will be kept dry and well ventilated. No storage of combustible materials, open flames or exposed electrical components are permitted in the flammable storage area.

4. Flammable or combustible materials may not be stored in electrical rooms. Electrical rooms must always be kept clean and dry .

Compressed Gas Storage Safety

1. Gas Cylinder Shipment Receiving
2. Inspect bottle for defects & proper marking/labels

3. Ensure stamped date on bottle has not expired
4. Inspect valve assembly and adapter thread area
5. Ensure MSDS is on file or with shipment
6. Follow MSDS requirements for storage
7. Gas Cylinder Storage
8. Cylinder cap securely in place when not in use.
9. Marked with contents and if empty/full.
10. Stored up-right and secured to a stationary structure in an shaded and well-ventilated area.
11. Cylinders not stored within 50 feet of exposed electrical components or combustible materials.
12. Cylinders are protected from accidental rupture.
13. Chemically reactive gases not stored within 50 feet of each other.
14. Gas Cylinder Movement
15. Must be secured to a cart or cylinder trolley
16. Cap securely fastened
17. Gas Cylinder Usage
18. Inspect valve adapter threads.
19. Inspect all fasteners, hoses & regulators prior to hooking up to cylinder.
20. Use only for approved purposes.
21. Use in up-right position.
22. Fasten cylinder to structure or cart.
23. Regulators must be of same rated pressure as cylinder
24. Keep cylinder valve shut when not in use; don't depend on regulators

Manual Material Handling Safety Program

1.0 PURPOSE

1.1 The purpose of the SEI Solutions LLC Manual Material Handling Program is to apply ergonomic principles and sound decision-making to the workplace in an effort to reduce the number of manual lifts thus decreasing workplace injuries and, where possible, increasing productivity, quality and efficiency. A proactive material handling approach focuses on making changes when risk factors have been identified, as well as incorporating automated material handling into the design phase of new facilities, equipment, tools and scheduling changes.

1.2 All employees are required to follow the minimum procedures outlined in this program. Any deviations from this program must be immediately brought to the attention of the Program Administrator.

2.0 SCOPE

2.1 SEI Solutions LLC. strives to provide all employees with a safe and healthy workplace. This Manual Material Handling Program is integrated into our company's written safety and health program and is a collaborative effort that includes all employees. The Program Administrator is responsible for the program's implementation, management and recordkeeping requirements.

3.0 RESPONSIBILITIES

3.1 **Management**: The management of SEI Solutions LLC. is committed to the safe handling of all materials. Management supports the efforts of the Manual Material Handling Program Administrator by pledging financial and leadership support for the identification and control of material handling risk factors.

3.2 **Material Handling Program Administrator:** The Safety Director will be the Program Administrator and will report directly to upper management and be responsible for this program. All evaluations, controls and training will be coordinated under the direction of the Safety Director in collaboration with management. The Safety Director will monitor the results of the program and determine additional areas of focus as needed. The Safety Director will also:

3.2.1 Ensure that those performing worksite evaluations and training are properly trained

3.2.2 Ensure that control measures are implemented in a timely manner

3.2.3 Schedule manager, supervisor and employee training and maintain records to include date, name of instructor, topic and materials used

3.2.4 Follow-up with any material handling strategy and/or solutions

3.2.5 Monitor the program on a quarterly basis and provide an annual review

3.2.6 Assist in selection of appropriate material handling equipment and tools

3.3 **Department Managers and Supervisors:** Managers and supervisors of SEI Solutions LLC. will:

3.3.1 Remain accountable for the health and safety of all employees within their departments through the active support of this program

3.3.2 Attend material handling training on the recognition and control of work-related material handling risk factors; this is a supplemental component to our Ergonomics program

3.3.3 Ensure that employees in their areas have received the appropriate training

3.3.4 Ensure that safe material handling practices and principles are considered daily and when conducting worksite evaluations

3.3.5 Ensure that recommended controls are implemented and/or used appropriately through active follow-up

3.3.6 Provide employees with and ensure the proper use of appropriate tools, equipment, parts and materials

3.3.7 Maintain clear communication with managers and employees

3.3.8 Periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries.

3.3.9 Make assistance available to employees who manually handle or lift items weighing 50 pounds or greater

3.4 **Employees:** Every employee of SEI Solutions LLC. is responsible for conducting himself/herself in accordance with this policy and program. All employees will:

3.4.1 Perform a hazard assessment prior to performing manual lifting. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.

3.4.2 Use two-wheeled trucks, four-wheeled carts, roller conveyors, pallet jacks, or any other material handling equipment in the manner established by managers and supervisors

3.4.3 Ensure that equipment is properly maintained in good condition and when not, report it immediately

3.4.4 Provide feedback to managers and supervisors regarding the effectiveness of design changes, new tools or equipment

3.4.5 Attend training as required and apply the knowledge and skills acquired during training to their jobs, tasks, processes, and work activities

3.4.6 Use proper lifting and material handling techniques as outlined in this policy

3.4.7 Limit manual lifting or handling tasks to objects less than 50 pounds

3.4.8 Get assistance whenever manually handling or lifting materials that are 50 pounds or greater

3.4.9 Report injuries within 24 hours of their occurrence

3.5 Employee involvement is an essential element to the success of this program. Employee participation in the program will occur only during company time. Employees that identify lifting hazards or other safety hazards will immediately notify their supervisor. If a supervisor is not available, they are to contact the Safety Department.

4.0 MANUAL MATERIAL HANDLING RISKS:

4.1 **Material Handling Equipment:** Additional tools and equipment are required when lifting or handling material weighing over 50 pounds. Manual material handling equipment should be used only for its designed task and maintained in good condition. The manual material handling equipment available at SEI Solutions LLC. includes:

4.1.1 Two-Wheel Trucks: Do not overload these trucks; load a maximum of 200 pounds. Make sure hand trucks are stored in a vertical position when not in use.

4.1.2 Four-wheel Carts: Load material evenly on carts to prevent tipping and view obstruction. Push rather than pull carts, unless specially designed to be pulled.

4.1.3 Roller Conveyor: Keep hands and feet away from pinch points and make sure that rollers extend beyond the load.

4.1.4 Pallet Jacks (manual or powered): Use a jack properly rated for the load. Place the jack on a level, stable, and clean surface. Avoid metal-to-metal contact (jack to surface being lifted) by using wooden shims.

4.2 **Housekeeping**: Material handling and storage areas must be kept free of excess materials that create hazards (i.e. fire, explosions, slips, trips, or infestation by insects or rodents.)

4.3 **Aisles and Passageways:** Where mechanical handling equipment is used, 10-foot safe clearances shall be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard.

Permanent aisles and passageways are marked with yellow lines. Clearance signs and warning of clearance limits are posted throughout the facility where headroom is below 10 feet. All equipment is marked indicating the working load it will safely support. Do not overload any piece of equipment.

The following is a list of materials/items that are commonly handled manually at SEI Solutions LLC. and the equipment that must be used to handle the material. The list does not cover every lifting occurrence in the workplace. If the task you are about to perform is not listed, contact your supervisor to determine the safest way to handle the material/item.

5.0 EMPLOYEE TRAINING

5.1 Training is intended to enhance the ability of managers, supervisors and employees to recognize work-related material handling risk factors and to understand and apply appropriate control strategies. Training will include general principles of ergonomics, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries. Additionally, job specific training should be given on safe lifting and work practices, hazards, and controls. Training in the recognition and control of these risk factors will be given as follows:

5.1.1 To all new employees during orientation

5.1.2 To all employees assuming a new job assignment requiring manual material handling

5.1.3 When new jobs, tasks, tools, equipment, machinery, workstations or processes are introduced

5.1.4 When high exposure risk factors have been identified

5.2 The minimum training requirements for all managers, supervisors and employees will include the following elements:

5.2.1 An explanation of SEI Solutions LLC. material handling program and their role in the program

5.2.2 Knowledge of job tasks that require manual material handling

5.2.3 An understanding of the basics of ergonomics

5.2.4 The methods used by SEI Solutions LLC. to minimize work-related risk factors

6.0 TRAINING SHOULD INCLUDE THE FOLLOWING TOPICS:

6.1 Mechanical aids for carrying or moving loads are to be used whenever possible to minimize manual material handling. These mechanical aids include hand trucks, carts, dollies, rolling conveyors, wheelbarrows, etc. When designing or modifying storage areas, store heavy items on shelves between knee and shoulder level and avoid storing items on the floor. Also, lighter items should be stored on top shelves. Whenever possible, decrease the object container size, change container shape and/or add handles to aid in handling.

6.2 Even when mechanical aids are used to move materials, some lifting cannot be avoided. Before you lift, remember the following:

6.2.1 Use manual material handling devices (hand dollies, carts, lift tables, forklifts) where defined by the company and wherever possible in all other situations

6.2.2 Wear supportive shoes

6.2.3 When possible, push and pull rather than lift and lower

6.2.4 Reduce the size of the material to keep it light, compact and easy to grasp

6.2.5 Try to have most workplace deliveries placed at hip height

6.2.6 Always keep objects in the comfort zone (between hip and shoulder height)

6.2.7 Keep all loads close to and in front of the body

6.2.8 Keep the back aligned while lifting

6.2.9 Keep elbows near 90 degrees

6.2.10 Avoid slopes and uneven floors

6.2.11 Maintain the center of balance

6.2.12 Let the legs do the actual lifting

6.2.13 Decide on the route to take

6.2.14 Check the route for any problems or obstacles such as slippery or cluttered floors

6.3 Unloading objects should be done the same way as loading objects, but in the reverse order as follows:

6.3.1 Slowly bend your knees to lower the load

6.3.2 Keep your back straight and the weight close to the center of your body

6.3.3 Allow enough room for fingers and toes when the load is set down

6.3.4 Place the load on a bench or table by resting it on the edge and pushing it forward with your arms and body

6.3.5 Secure the load to ensure that it will not fall, tip over, roll or block someone's way

6.4 One-arm loads are used when carrying items such as pails or buckets. Lifting and carrying one-arm loads should be performed as follows:

6.4.1 Bend at the knees and waist, keeping your back straight

6.4.2 Reach for the load

6.4.3 Grasp the handle of the load firmly

6.4.4 Lift with your legs, not your shoulders and upper back

6.4.5 Keep your shoulders level while switching hands regularly to reduce overexerting one side of the body

6.5 Team lifts are used when objects are too heavy, too large or too awkward for one person to lift. Team lifts should be performed as follows:

6.5.1 Work with someone of similar build and height, if possible

6.5.2 Choose one person to direct the lift (e.g., “lift on the count of three”)

6.5.3 Lift with your legs and raise the load to the desired level at the same time

6.5.4 Always keep the load at the same level while carrying

6.5.5 Move smoothly and in unison

6.5.6 Set the load down together

6.6 Overhead loads should be eliminated if possible, but if necessary, should be conducted as follows:

6.6.1 When lifting or lowering objects from above the shoulders, lighten the load whenever possible

6.6.2 Stand on something sturdy such as a step stool or platform to decrease the vertical distance

6.6.3 When lowering objects from above the shoulders, grasp the object firmly, bring the load as close to your body as possible, slide it down slowly and proceed with your move

7.0 INVESTIGATION

7.1 The Safety and Health Manager will review each reported incident and event to:

7.1.1 Determine if further investigation is required and then perform the investigation

7.1.2 Make recommendations for corrective and/or preventative actions necessary to reduce or eliminate hazardous conditions and monitor the status of the abatement actions.

7.1.3 All incidents or injuries caused by improper lifting should be investigated, and the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method.

7.1.4 Proper equipment will be provided to conduct investigations. Equipment may include some or all of the following items: writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.

7.1.5 Musculoskeletal injuries caused by improper lifting must be investigated and documented. Incorporation of investigation findings into work procedures must be accomplished to prevent future injuries.

Title:	Manual Lift Program	**Safety Manual Document #:**	TBD
Pages:	7	**Effective Date:**	5/5/20
Preparer:	George Humphrey	**Owner:**	Safety Dept/Operations Manager
		Approver:	Chief Operations Officer

Revision History			
Date	**Section**	**Brief Description of Changes**	**Approver Initials**

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Hand Safety & Protection Program

SEI Solutions LLC. has implemented this safety program to ensure the protection of personnel from hazards on the job which may be safeguarded against by proper hand placement and use of hand protection (gloves). The Job Supervisors are responsible for ensuring the following work practices are enforced:

Follow the work practices and use the equipment and gloves provided. Gloves and safety procedures won't work if they're not used or followed. Be aware of the job tasks, equipment and materials that can create a risk for a hand injury. The following are common type of hand injuries and know the steps that should be taken to prevent exposures and injuries.

- **Punctures, cuts or lacerations** – caused by contact with sharp, spiked or jagged edges on equipment, tools or materials.
- **Crushed, fractures or amputations** – caused by contact with gears, belts, wheels and rollers, falling objects, and rings, gloves or clothing getting caught and putting your hand in harm's way.
- **Strains, sprains, and other musculoskeletal injuries** – caused by using the wrong tool for the job, or one that is too big, small or heavy for your hand.
- **Burns** – caused by direct contact with a hot surface or a chemical.
- **Dermatitis and other skin disorders** – caused by direct contact with chemicals in products and materials.

SEI Solutions LLC. has implemented and will enforce the following work practices and procedures to assure that no employee will be exposed to hazards relating to hand placement.

- Always stay alert and focused on keeping your hands safe – not just at the start of work or a task.
- Avoid crushing injuries by placing at minimum 1.5" spacers between objects.
- Trailer dollies/jacks will be used to attach and detach trailers from vehicles. Manually lifting or adjusting trailers onto truck hitches is strictly prohibited.

- The use of no touch tools, slings, hoist, straps, or cranes shall be used when 12" hands free zone cannot be maintained during lifting of heavy equipment.
- Use tools and equipment designed for the work being performed and use them as instructed by your supervisor and/or the manufacturer.
- Don't put your hands or fingers near the moving parts of a power tool or equipment. Maintain 12" hands free zone at all times. Make sure machinery, equipment and power tools are completely off before you try replacing, cleaning or repairing parts – follow lock-out/ tag-out procedures.
- Keep hands and fingers 12" away from sharp edges (blades, protruding nails, etc.). Never cut toward the palm of your hand.
- Wear gloves that fit your hand and are right for the work being performed – not all gloves protect against all hazards. Know the limitations of the selected gloves.

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*, and *heat*. There are gloves available that can protect workers from any of these individual hazards or any combination thereof.
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.
Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type of glove materials to be used (in these situations) include leather, welder's gloves, aluminum-backed gloves, and other types of insulated glove materials.
The Safety Director can help the supervisor identify appropriate glove selections for their operations. The Safety Director also maintains a selection of gloves for various tasks.

- The Safety Director will ensure that all employees are properly trained in the recognition and assessment of hazards and hazardous situations, the proper selection and use of hand protection (gloves) required for the hazard and methods to avoid, prevent, or abate such hazards.
- Hand protection training will include: When hand protection is necessary: how to properly don, doff, adjust and wear hand protection;

the limitations of hand protection; proper care, maintenance, useful life and disposal of the hand protection.

- Retraining of employees is required when the workplace changes, making the earlier training obsolete; the type of hand protection changes, or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.
- Employees will be trained on initial hiring to use, maintain, clean and disinfect, store, and service hand protection. Employees will receive refresher training on hand protection at least annually, or as work requirements, changing job assignments, or environment warrants it. Any employee who demonstrates a lack of knowledge or understanding of any aspect hand protection use or maintenance will be retrained. An employee must verify his/her understanding of training content as a condition of employment.
- The Supervisor will do a hazard assessment of each jobsite prior to commencement of work to ascertain if hazards are present or likely to be encountered, what engineering controls may be implemented to minimize hazards, and what hand protection or tools are necessary for the performance of the job. The job hazard assessment (JSA) will include the Supervisors name, signature, date(s), and identification of assessment documents. Affected employees will be notified of hazards, engineering controls needed, and hand protection (gloves) required.
- Hand protection will be provided for all work required by SEI Solutions, LLC. and employees are required by company policy to use only proper company hand protection at all times when required on the job or on company property. Failure to use proper hand protection will result in disciplinary action against the violating employee.
- The Safety Director will ensure that if employee-owned hand protection is used, it will be adequate for the application, properly maintained, and kept in sanitary condition prior to use.
- Defective or damaged hand protection will NOT be used. Defective or damaged hand protection will be immediately removed from service and replaced with serviceable equipment. Hand protection will be inspected by the individual employee at the beginning of each work shift.
- Hand protection must be used, stored, and maintained in a sanitary condition. All hand protection must be cleaned and/or disinfected and stored according to manufacturer recommendations.

3.16
Company Policy for Hand and Portable Powered Tools

SEI Solutions has adopted this safety program for Hand and Portable Powered Tools from the following OSHA regulations:

- *§1910.241 –* ***Hand and Portable Powered Tools and Other Hand-Held Equipment***
- *§1926.300 –* ***Tools - Hand and Power***

SEI Solutions has implemented this policy to ensure that no employee is exposed hazards caused by improper or unsafe use of hand and portable powered tools.

SEI Solutions will provide instruction and training by a Competent Person for each employee using any such tool.

The program will enable each employee to recognize hazards related to hand and portable powered tool use and will train each employee in the procedures to be followed to minimize these hazards. The Safety Director is the supervisor responsible for ensuring the following instruction, training, and safe work practices are enforced:

- The Safety Director will ensure that each employee has been trained or instructed by a competent person in the following areas, as applicable:
- All hand and power tools and similar equipment, whether furnished by SEI Solutions or the employee, will be maintained in a safe condition.
- Any tool not in compliance with any applicable OSHA requirements is prohibited. Such tools will either be identified as unsafe by tagging or locking the controls to render them inoperable, or the defective tool will be physically removed from its place of operation.
- When power operated tools are designed to accommodate guards, they will be equipped with such guards when in use.
- Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such way that will comprise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in ANSI B15.1.
- Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases will be provided with the appropriate PPE necessary to protect them from the

hazard.

- Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment will be guarded if such parts are exposed to contact by employees or otherwise create a hazard.

- One or more methods of machine guarding will be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks. The point of operation of machines whose operation exposes an employee to injury, will be guarded.

- All fuel powered tools will be stopped while being refueled, serviced, or maintained. When fuel powered tools are used in enclosed spaces, the applicable PPE requirements for hazardous atmospheres will apply.

- SEI Solutions employees are required to follow these general requirements for safe hand-held power tool use:

General Power Tool Use

- Do not allow anyone to use power tools that has not been properly instructed and approved in the processes of safe operation.

- Be familiar with your power tools. When using a new tool, or one that is foreign to you, take some time to —test-run‖ it and get a feel for its performance. Read and understand the operator ‗s manual and follow its instructions. Prior to its use, do a visual and operational inspection to ensure safe mechanical function.

- Eye protection shall be worn when using power tools. When operations present potential eye injuries, adequate and appropriate protection must be selected. Use a face shield, protective goggles, or approved safety glasses depending on the job performed.

- Hearing protection shall be always worn when noise levels are at or above 90db.

- Depending on the material being cut, appropriate gloves shall be worn, appropriate respirator may be required.

- Wear clothing appropriate for power tools use; avoid long, loose shirtsleeves, neckwear, or untied long hair.

- Check that the electrical circuit to be used is of the proper rating and that cords, plugs, and fittings are intact and secure. All power tools must be grounded unless they are

double insulated.

- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Use 3-prong adaptors.
- Ensure all power tools are equipped with proper shields and guards, as recommended by the manufacturer. The guards are designed and engineered for the operator‘s safety.
- Operate only properly maintained equipment. Check that spring-loaded on/off trigger switch functions properly.
- If any operational problems are noted, remove the power tools from service and get it repaired immediately.
- When repairing tools, or changing blades, bits and/or cutters, always disconnect the power source.
- Remove chuck-keys or arbor wrenches before using the tool.
- When possible, always secure your work on a stable platform using clamps or vices.
- Unsafe practices and inadequate housekeeping create potentially dangerous work-zones; keep the work area free of trip hazards such as tangled power cords, cluttered material, scraps, bricks, or other obstacles and obstructions.
- Be aware of your surroundings and always on the lookout for hazards. Avoid using power tools in a wet environment.
- Always use the proper tool for the job. When not in use, store tools in a dry, secure location

Powder-Actuated Tools

SEI Solutions employees are required to follow these general requirements for safe powder-actuated tool use:

- Operators and assistants using tools must use eye, head, and face protection as required by working conditions.
- Inspect the tool before use to ensure that it is clean, that all moving parts are free, and that the barrel is free of debris or obstructions.
- The muzzle end of the tool must have a guard at least 3 ½‖ in diameter to confine any

flying fragments that might create a hazard.

- If a tool is defective, it must be taken out of use until it is properly repaired.
- Tools are to remain unloaded until they are to be used.
- Never point a tool loaded or unloaded at anyone.
- In case of a misfire, the tool must be held in the operating position for at least 30 seconds, tried a second time, then wait another 30 seconds before unloading in strict accordance with manufacturer 's instructions.
- Never leave a tool unattended where it would be available to unauthorized personnel.
- Fasteners must not be driven into exceptionally hard materials such as cast iron, glazed tile, hardened steel, glass block, or rock.
- A backing must be used on soft materials to prevent fastener from passing completely through and becoming a flying hazard.
- Fasteners must not be driven through an existing hole unless means of positive alignment is available.
- Fasteners may not be driven into a cracked or fractured area caused by a previous fastener.
- Tools must not be used in an explosive or flammable atmosphere.
- Requirements for loads and fasteners:
    - There must be a standard means of identifying the power level of loads being used in the powder actuated tools.
    - No load may be used more than design specifications for a low velocity tool.
    - Fasteners used in tools must be only those designed to be used in such tools.

Circular Saws

SEI Solutions employees are required to follow these safety guidelines when using a circular saw:

- Eye protection is extremely important and must always be worn when using circular saws.

When operations present potential eye injuries, adequate and appropriate protection must be selected. Use a face shield, protective goggles, or approved safety glasses depending on the job to be performed.

- Hearing protection may be required due to the extreme noise levels generated, especially during extended use.
- A respirator or dust mask may be required, depending on the material being cut.
- Do not wear loose clothing, long-sleeves, or gloves while operating a circular saw.
- Check that the electrical circuit to be used is of the proper rating and that cords, plugs, and fittings are intact and secure. All circular saws must be grounded unless they are double insulated.
- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Do not use extensions over 100 ft. long due to the power drop.
- Operate only properly maintained equipment. Check that the spring-loaded on/off trigger switch functions properly. If any operational problems are noted, remove the circular saw from service and get it repaired immediately.
- Be aware of your surroundings and always on the lookout for hazards. Avoid using circular saws in a wet environment.
- Always cut material on an elevated work platform. Never attempt to cut any material lying on the ground or by simply holding the material in your opposite hand.
- Be aware of the position of the cord. Always clear the cord before making the cut.
- Inspect all material prior to cutting. Look for defects such as knots in the wood, nails and screws, or any obstruction that may impede the cut.
- Always inspect the saw prior to operation, ensuring the blade is tight and guards are fully functional.
- Never pin back or otherwise disable the retractable guard.
- Unplug the saw when changing blades or making adjustments for depth or angle.
- After tightening the blade or making other adjustments, be sure to remove wrench before operating the circular saw.

- Maintain the saw and use only sharp blades or non-defective abrasive wheels free of distortion, cracks, or heat damage. A ring test will be performed on blades prior to installation to determine soundness.
- Always store and discard saw blades in a safe responsible manner.
- When the saw is not in use unplug the saw and place the saw out of the way with the blade facing down.
- Always use the proper tool for the job. When not in use, store circular saws in a dry, secure location.

Miter Saws

SEI Solutions employees are required to follow these safety guidelines when using a miter cut-off (chop) saw:

- Do not ever, under any circumstances, allow anyone to use a chop saw that has not been properly instructed and approved in the processes of its safe operation.
- Prior to its use, do a visual and operational inspection to ensure safe mechanical function of the saw:
    - Make certain all blade guards are in place and working smoothly. Removing or pinning back guards is not only extremely hazardous; it is considered a serious safety violation.
    - Check the blade to be sure that it is straight, and the arbor bolt is tight.
    - Ensure the —constant-pressure‖ trigger switch operates properly.
    - Check that the electrical cords, plugs, and fittings are intact and secure. Frayed cords are not permissible.
    - Be sure that arbor wrenches or keys were not inadvertently left behind on the machine during a blade change.
- When setting-up the cutting station, it is important that the saw is positioned in a manner that the work piece ‘s point of contact with the cutting edge can be easily viewed without straining or stooping.
- Make sure the work-zone is level and free of trip hazards such as tangled power cords, cluttered material piles, scraps, stones, bricks, or other obstacles and obstructions. Avoid

unsafe distractions by setting up away from high traffic areas.

- Ensure the saws table or platform being used is stable and does not wobble. Be sure that accessory benches (for cutting long stock) are steady and sturdy; get assistance when needed.
- During cuts, keep blade speeds at recommended levels; over-pressure on cuts will create hazardous situations.
- Hearing protection is required due to the extreme sonic and acoustical levels generated, especially during extended cutting.
- Eye protection must always be worn when using a chop saw.
- Depending on the material being cut, a dust mask may be required.
- Wear clothing appropriate with chop saw use; avoid long, loose shirtsleeves, neckwear, or untied long hair.
- If any operational problems are noted, remove the saw from service and get it repaired immediately.
- Proper care and maintenance should always be given the saw. Damage usually occurs during careless transport, handling, and storage of the tool.
- Allow only qualified personnel to make repairs to the saw.

Drills

SEI Solutions employees are required to follow these safety guidelines when using drills:

- Do not allow anyone to use an electric drill that has not been properly trained in the processes of safe portable drilling operations.
- Operate only properly maintained equipment. Before use, carefully inspect the machine for obvious defects that could cause malfunctions. Ensure the tools power cord is secure and intact, the trigger switch functions properly, and that all fasteners and attachments are tight and correctly fitted. When possible, operate the tool using both hands and follow the manufacturers operating instructions.
- Eye protection is extremely important and must always be worn when doing overhead operations. When operations present potential eye injuries, appropriate protection must be selected. Depending on the task, use a face shield, protective goggles, or approved

safety glasses.

- Be familiar with the power drill being used. When using a new or unfamiliar tool, take time to —test-runǁ it and get a feel for its performance.
- Wear clothing appropriate for drilling or boring; avoid long, loose shirtsleeves, neckwear, or untied long hair.
- Check that the electrical circuit to be used is of the proper rating and that cords, plugs, and fittings are intact and secure.
- Use only extension cords that are free of splices, taps, bare wires, or frayed and deteriorated insulation. Use 3-prong adaptors.
- Select the correct drill and bit for the job and mount it securely in the chuck. Avoid using bits that are dull or bent.
- When possible, always secure your work on a stable platform using clamps or vices. The workpiece must be secured so it does not move.
- Prior to beginning drilling operations, inspect each work piece for nails, knots, or flaws that could cause the tool to buck or jump.
- Turn on the switch for a moment to see if the bit is properly centered and running true.
- With the switch off, place the point of the bit in the punched layout or pilot hole.
- Hold the drill firmly in one or both hands and at the correct drilling angle.
- Turn on the switch and feed the drill into the workpiece. The pressure required will vary with the size of the drill, the diameter of the drill bit, and the kind of material being drilled.
- During operation, keep the drill aligned with the direction of the hole. Keep your free hand away from point of operation.
- If any operational problems are noted, remove the drill from service and get it repaired immediately.
- When repairing tools or changing bits, always disconnect the power source.
- Unsafe practices and inadequate housekeeping create potentially dangerous work-zones; keep the work area free of trip hazards such as tangled power cords, cluttered material,

scraps, stones, bricks, or other obstacles and obstructions.

- Be aware of your surroundings and always on the lookout for hazards. Avoid using electric drills in a wet environment.

Portable Abrasive Wheels

SEI Solutions employees are required to follow these safety guidelines when using handheld grinders or other portable abrasive wheels:

- Employees using grinding tools and/or are exposed to the hazards of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, or vapors will be provide with, and compelled to use, the particular personal protective equipment necessary to protect them from the hazard. This equipment includes eye and face, respiratory, hearing, and hand protection and will be properly maintained to meet all applicable standards.

- All power grinding tools will be maintained in a safe condition. When these tools are designed to accommodate guards, they will be in place when the tool is in use. Safety guards will be strong enough to retain flying fragments and withstand the effects of a bursting wheel.

- All grinding machines will be supplied with sufficient power to maintain safe spindle speeds under normal operating conditions.

- All abrasive wheels will be carefully inspected and —ring-tested‖ before mounting to ensure that they are free from cracks or defects. To perform a sound or ring test, wheels should be tapped gently with a light, non-metallic instrument. If they sound cracked or dead, they could fly apart during operations and should be discarded. An intact, undamaged wheel will give a clear metallic tone or —ring‖.

- Only portable grinders with wheels 2 inches in diameter or less may be equipped with a positive on/off control switch. Grinders with wheels greater than 2 inches in diameter will be equipped with a momentary contact on/off switch and may have a lock-on control.

- Grinders will be used on a 3-wire grounded circuit or be of the approved double insulated type. Using the tool‘s power cord for hoisting or lowering will not be permitted.

- All grinding/cutting wheels will fit freely on the spindle and must not be forced on. The spindle nut will be tightened only enough to hold the wheel in place.

- When grinding metal, it is easy to leave razor-sharp edges; be sure you take them off

before walking away from a work piece.

Pneumatic Nail Gun and Stapler

SEI Solutions employees are required to follow these safety guidelines while operating pneumatic nail gun and staplers:

- Never allow anyone to operate these tools without first being properly instructed in their safe use.
- Appropriate Personal Protective Equipment must be always worn when using compressed air tools and equipment.
- Pneumatic powered tools must be secured to the hose by some positive means to prevent the tool from becoming accidentally disconnected.
- All pneumatically powered nail guns, staplers, or other similar equipment with automatic feed, that operate at over 100 psi at the tool, must have a safety device on the muzzle to prevent the tool from cycling and ejecting fasteners, unless the muzzle is in contact with the work surface.
- Compressed air must not be used to clean except where pressure is reduced to less than 30 psi. The 30-psi rule does not apply to concrete forms, mill scale, and similar cleaning purposes.
- The manufacturers safe operating pressure for hoses, pipes, valves, filters, and other fittings must not be exceeded.
- Avoid horseplay when using air guns. Accidentally discharged fasteners can easily penetrate flesh and bone.
- Safety features should be left intact, or you could nail your foot to the deck—it does happen.
- Always wear appropriate eye protection when using any air gun.
- Hearing protection is often required depending on the noise level.
- Read the owner's manual and operate the tool according to manufacturer's guidelines.
- Ensure that tools are properly maintained and are in good working condition.
- Never exceed manufacturers recommended working pressures and never use more

pressure than necessary (seldom more than 90 – 95 psi). Excessive pressure exerts more force, causing harder cycles. It is hard on tools and generates more flying debris.

- Always keep the nose of the tool pointed toward the workpiece or downward when air charged. Never point the tool towards yourself or others.
- During use, hold the nose of the gun firmly against the workpiece.
- Ensure all safety features are intact and operational. Make sure they are not disabled and are functioning properly.
- Always disconnect tool from air supply when clearing a jam or when not in use. Keep hoses and fittings in good condition.
- Never carry an air gun with your finger on the trigger. Accidental discharge and injury may result.
- Tie-off and secure the air hose when working on a roof or scaffold to prevent the tool from falling on others.
- Always move forward when working a nail gun or stapler on a roof so you do not inadvertently trip or fall from the roof.
- Never use volatile bottled gas to operate pneumatic fasteners or operate air guns around flammables; sparks may cause a fire.
- Keep your free hand clear of air guns nose during use.
- Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

Air Compressors

SEI Solutions employees are required to follow these safety guidelines while operating air compressors:

- Every air receiver must be equipped with a pressure indicator gauge with one or more spring loaded safety valves.
- Pressure gauges must be located so as to be readily visible.
- The pressure relief safety valves may not exceed the rated working pressure of the air receiving tank.

- No valve of any type may be placed between the safety valve and the air receiver.
- Safety valves, pressure gauges, regulators, and other controlling devices must be designed and installed so that they cannot be easily rendered inoperative by any means, including weather elements.
- All safety valves must be tested at frequent intervals to determine proper operating condition.
- A drainpipe and valve must be installed at the lowest point of any air receiver to provide for the frequent and complete removal of accumulated oil and water.
- Never install compressors on an unrated air tank. The air receiver tank must be rated equal to or higher than original equipment.
- If pressure gauges or pressure relief valves are damaged, replace them with compatible equipment before using the compressor.
- If a compressed air storage tank is dented, deeply gouged, or badly rusted, compressor must be removed from service.
- Do not use compressed air to pressurize barrels, pipes, or other containers not designed or intended as pressure vessels.
- If an air receiver is equipped with a quick connect/release fitting, make sure the lock collar is fully engaged when hose is connected. When the hose is released from the fitting, firmly grasp the hose close to the fitting before releasing the lock collar.
- Before servicing a compressor, disconnect it from the power source and bleed the pressure from the tank. (Use appropriate LOTO)
- Pulleys and belts on compressor motors and pumps must be properly guarded.
- If using a gas-powered compressor, engine must be shut off before refueling.
- If an electric powered compressor, check power cord for cuts and abrasions, if the cord, plug, or any components are damaged, replace before use.

Hand Tools

SEI Solutions employees are required to follow these safety guidelines when using hand tools:

- **General Tools:** Always wear Personal Protective Equipment that is appropriate for the

hand tool being used.

- Damaged, worn-out, or defective tools should be tagged and removed from service. Do not perform "make-shift" repairs to tools.
- Never use a tool if its handle has splinters, burrs, cracks, splits or if the head of the tool is loose.
- Do not use impact tools such as hammers, chisels, punches or steel stakes that have mushroomed heads.
- When handing a tool to another person, direct sharp points and cutting edges down and away from yourself and the other person.
- Carry all sharp tools in a sheath or holster. Do not carry sharp or pointed hand tools such as screwdrivers, scribes, snips, scrapers, chisels or files in your pocket unless the tool is sheathed. Transport hand tools only in toolboxes or tool belts.
- Use tied off containers to keep tools from falling off scaffolds and other elevated work platforms.
- Avoid carrying tools in your hand when you are climbing. Carry tools in tool belts or hoist the tools to the work area using a hand line.
- Do not throw tools from one location to another or from one employee to another.
- **Hammers:** Do not use a hammer if your hands are oily, greasy or wet.
    - Never strike another hardened steel tool or surface, such as a cold chisel, with a claw hammer.
    - Avoid striking nails or other objects with the "cheek" of the hammer.
    - Do not strike one hammer against another hammer.
    - Never use a hammer as a wedge or a pry bar.
- **Hand Saws:** When using a handsaw, hold the work-piece firmly against the work table.
    - Do not use an adjustable blade saw, such as a hacksaw or a coping saw, if the blade is not taut.
    - Avoid using any saw with a dull blade; always keep blades clean and sharp.

- Keep hands and fingers away from the point of cut when using any saw.
- Never carry a hand saw by the blade.

- S**crewdrivers:** Do not use a screwdriver if your hands are wet, oily or greasy.
  - Always match the size and type of screwdriver blade to fit the head of the screw.
  - Never hold the workpiece against your body while using a screwdriver.
  - Avoid putting your fingers near the blade of the screwdriver when tightening a screw.
  - Use a drill, nail, or an awl to make a starting or pilot hole for screws.
  - Do not force a screwdriver by using a hammer or pliers on it.
  - Never use a screwdriver as a punch, chisel, pry bar, or nail puller.
  - When performing electrical work, ensure the screwdriver has a properly insulated handle.

- **Pliers:** Do not use pliers that are cracked, broken or sprung.
  - Never use pliers as a wrench or a hammer.
  - Do not attempt to force pliers by using a hammer on them.
  - When you are performing electrical work, use pliers that have properly insulated handles.
  - When using diagonal cutting pliers, shield the loose pieces of cut material from flying into the air.

Wrenches

SEI Solutions employees are required to follow these safety guidelines when using wrenches:

- Inspect the wrench carefully before use and do not use if damaged.
- Discard any wrench that has spread, nicked or battered jaws, or if the handle is loose, broken or bent.
- Always use the proper size wrench for the job. A slipping wrench can damage bolt heads and nuts and cause personal injury. Do not use a shim to make a wrench fit the fastener.

- Use a wrench that gives a straight, clean pull. If you must push the wrench, use the heel of your hand; do not wrap your fingers around the tool.
- Do not cock the wrench in a manner that puts a strain on the points of contact; this can lead to tool failure. Keep the wrench flush with bolt head.
- Avoid using a pipe or other —cheater bars‖ to extend the length of a wrench. Under excessive force, the wrench or bolt can slip or break.
- Do not use a hammer with a wrench unless the wrench has been specifically designed for this purpose.
- Replace cracked, worn, or —tweaked‖ wrenches.
- Do not attempt to straighten a bent wrench. It will only weaken it further.
- Do not substitute slip-joint pliers for a wrench; the pliers can slip and damage the bolt heads and nuts and cause hand injuries.
- Sockets designed for use with hand wrenches should not be interchanged on air or impact wrenches; this can result in damage or injury.
- When using air impact or other air wrenches, wear eye protection to safeguard against blowing debris. Use only heavy-duty hardened sockets.
- Use a torque wrench for tightening only. Never use torque wrenches to break nuts or bolts loose; they are designed to measure tightness.
- Be sure the jaws on you pipe wrenches are still sharp as unexpected slippage can cause injury.

Jacks - lever and ratchet, screw, and hydraulic

SEI Solutions employees are required to follow these safety guidelines when using jacks:

- The manufacturer's rated capacity will be legibly marked on all jacks and will not be exceeded.
- All jacks will have a positive stop to prevent overtravel.
- When it is necessary to provide a firm foundation, the base of the jack will be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block will be placed between the cap and the load.

- After the load has been raised, it will be cribbed, blocked, or otherwise secured at once.
- Hydraulic jacks exposed to freezing temperatures will be supplied with an adequate antifreeze liquid.
- All jacks will be properly lubricated at regular intervals.
- Each jack will be thoroughly inspected at times which depend upon the service conditions. Inspections will be not less frequent than the following:
    - For constant or intermittent use at one locality, once every 6 months,
    - For jacks sent out of shop for special work, when sent out and when returned,
    - For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.
- Repair or replacement parts will be examined for possible defects.
- Jacks which are out of order will be tagged accordingly and will not be used until repairs are made.

3.17
Hydro-Blasting

Purpose

1.1 To establish a procedure for the personal protective equipment requirements, equipment standards, operating procedures, medical treatment information and training requirements for the safe and proper operation for the full range of high- and low-pressure water jet cleaning equipment.

Scope

2.1 This procedure applies to all Company, affiliated companies, and sub-contractor personnel.

Responsibilities

3.1 Program Responsibilities for all Policies and/or Procedures have now been addressed globally and included with the Safety & Health Statement of Policy and Responsibilities". This has been done to help streamline the Program and address Responsibilities across the entire Program. In addition, they can also be found in "Safe Work Practices Handbook". Please review these responsibilities within the scope of each policy or procedure and for overall guidance for responsibility to this Program.

Definitions

4.1 Automatic Pressure Relief Devices - These may take the form of:

4.1.1 Pressure Relieve Valve or Bursting Disc in Holder - Usually mounted on the pump discharge to prevent pressure exceeding the rated maximum pressure of the whole system.

4.1.2 Automatic Pressure Regulating Valve (Unloading Valve) – Valve used to automatically control the working pressure system by controlling the bypassing water flow. When the pressure in the system exceeds a set pressure level the valve will partially open.

4.2 Dry Shut-Off Control Valve - This operator-controlled valve normally hand-controlled, automatically shuts off flow to the lance, and/or nozzle assembly when released by the operator but retains the operating pressure within the supply line when so shut-off. This valve shall be used in systems with an Automatic Pressure Regulating Valve. Care shall be taken to release the pressure in the dry shut-off valve and line when pump is shut down. Otherwise, the valve-operating lever may remain LIVE.

4.3 Dump Control Valve - This operator-controlled valve normally hand-controlled, automatically stops significant flow to the lance, and/or nozzle assembly when released by the operator, thus relieving the operating pressure within the whole system by diverting the flow produced by the pump to the atmosphere. A valve size should be selected that will not cause generation of significant back pressure at the maximum pumping rate of the pump. This valve may alternatively be solenoid or pilot pressure mechanism.

4.4 Dump System - The system shall be equipped with a device which will shut down the unit, idle it to a low rpm, bypass the flow or reduce the discharge pressure to a low level. The dump system shall be manually controlled only by a nozzle operating. The Dump System actuator device should be shielded to preclude inadvertent operation. This device should immediately shut off the high-pressure water stream if the operator loses control.

4.5 Flex Lance Guard – A safety device placed on the flex lance at the nozzle end to catch the nozzle as it is extracted, before it can potentially cut the operator.

4.6 Flex Lance – A flexible tube or hose section carrying high pressure water to the nozzle, located between the control valve and the nozzle.

4.7 Foot Control Valve - The operator's control valve may be arranged for actuation by the operator's foot if desired, either in place of, or in addition to, hand control. An adequate guard should be fitted to prevent accidental operation and the base plate should be sufficient to ensure stability in use. If on the dump type the layout should ensure that the dump line, if used, is restrained from whipping when the valve is released.

4.8 High Pressure Hose - This is a flexible hose which connects two components, and which delivers the high-pressure fluid to the gun or nozzle components. The hose should have a burst rating of a minimum of 2.5 times the intended work pressure. Operating levels below this ratio will require protective shielding around the hose. The hose should be marked with manufacturer's symbol, serial number, the maximum permissible operating pressure, and the test pressure. High pressure end fittings and couplings shall be manufactured to be compatible with the hose and tested as a unit.

4.9 High Pressure Water Cleaning - The use of high-pressure water, with or without the addition of other liquids or solid particles, to remove unwanted matter from various surfaces, where the pressure of the liquid jet exceeds 1,000 PSIG at the orifice.

4.10 Lancing - An application whereby a lance and nozzle combination is inserted into, and retracted from, the interior of a pipe or tubular configuration.

4.11 Moleing - The application whereby a hose fitted either with a nozzle or with a nozzle attached to a lance is inserted into, retracted from, the interior of the tubular product. It is a system commonly intended for cleaning the internal surfaces of pipes or drains.

4.12 Nozzle - A device with one or more openings where the fluid discharges from the system. The nozzle restricts the area of flow of the fluid, accelerating the water to the required velocity and shaping it to the required flow pattern and distribution for a particular application. Combinations of forward and backward nozzles are often used to balance thrust. Such nozzles are commonly referred to as tips, jets, orifices, etc.

4.13 Operator - A person who has been trained and has demonstrated the knowledge and experience to perform the assigned task. This may be the nozzle, foot pedal, or pump operation, depending on the type of job required.

4.14 Pressure Gauge - The system shall be equipped with a gauge indicating the pressure being developed. Gauges shall have a scale range of at least 50% above the maximum working pressure of the system.

4.15 Pressurizing Pump¬ - A unit designed to deliver high pressure water or other fluid. This is usually based on positive replacement pistons or rubber diaphragm/hydraulic systems, and discharges water into a common manifold to which either flexible hoses or rigid tubing connecting to lances and nozzles are attached. These pumps can be either mobile or permanently mounted. The pump shall have a permanently mounted tag which provides the following information:

4.15.1 Product and Supplier

4.15.2 Production model and serial number, or year of production

4.15.3 Maximum performance in terms of gpm and pressure in psi.

4.16 Relief System - The system shall be equipped with an automatic relief device on the discharge side of the pump.

4.17 Shot gunning - An application whereby a lance and nozzle combination can be manipulated in virtually all planes of operation.

4.18 Stiff Lance - A rigid metal tube used to extend the nozzle from the end of the hose.

4.19 Stinger – A length of rigid tube or pipe mounted between the flex lance and the nozzle to provide a margin of safety for the operator during nozzle extraction, 36” minimum per policy but in all cases, must be at least 6” longer than the internal diameter of the equipment being cleaned.

4.20 Whip Check - Stainless Steel cable with looped ends, to be attached to 10,000 psi high-pressure hoses by linking the couplings, to minimize any possible injury or damage that may occur if there is a failure of the hose fittings

Hydro-blasting Classifications

5.1 For purposes of this Policy, Hydro blasting will be classified in three (3) categories. The distinctions are necessary, due to the inherent risk of increasing pressure. Each level has increasing requirements for configurations of equipment, PPE and employee training. The classifications are as follows:

5.1.1 Pressure Washing – water pressure ranging up to 4,000 PSI shall be considered as the ceiling pressure for PPE and equipment criteria described in that section of this policy and required for those activities.

5.1.2 Hydro blasting – water pressures ranging from 4,000 to 10,000 shall be considered as the ceiling pressure for PPE and equipment criteria described in that section of this policy and required for those activities.

5.1.3 Ultra-high Hydro blasting – water pressure from 10,000 to 40,000 shall be considered as the ceiling pressure for PPE and equipment criteria described in that section of this policy and required for those activities.

Pre-Operating Procedures

6.1 Planning - Work authorization (permit) and SEI JSA shall be obtained and completed from client prior to beginning of work. Special attention must be given to the Hydro-blasting portion of the JSA. At a minimum the job description, equipment being cleaned, precautions taken to protect electrical equipment, maximum operating pressure should be addressed and signed by all qualified personnel.

6.2 Check List – Daily inspection of high-pressure unit must be completed prior to use before each job and documented on Equipment Inspection Form.

6.3 Hoses shall be arranged so a tripping hazard does not occur. Hoses, pipes and fittings shall be supported to prevent excessive sway and/or wear created by vibration or stress on the end connections when laid on the ground, over sharp objects or on vertical runs. All hoses shall be checked for evidence of

damage, wear, or imperfections. The check shall be made periodically during the operation.

6.4 All fittings shall be cleaned and lubricated before installing into the system. Be sure all fittings, hoses and nozzles are fit for the purpose.

6.5 The system shall be completely flushed with sufficient water to remove any contaminants before installing the nozzle.

6.6 All orifices shall be checked in nozzles for blockage and/or damage or imperfections.

6.7 Any electrical equipment in the immediate area of the operation that presents a hazard to the operator shall be de-energized, shielded or otherwise made safe.

Operating Procedures – General

7.1 Where possible, equipment to be hydro-blasted should be removed from plant areas to a separate cleaning area. Where impractical, clean in place or adjacent to the installed position can be done with the necessary clearance and permission from the client.

7.2 Work Area boundaries applicable to the cleaning operations shall be defined, and employees shall mark these limits by barriers and notices to warn against access to other personnel. Suitable barriers shall be a client approved form of hazard warning, rope or tape, at a minimum. Alternatively, a suitable barrier shield is acceptable at any reasonable distance. Notices should state “KEEP CLEAR, HIGH PRESSURE WATER JETTING IN OPERATIONS” or other similar wording.

7.3 Where there is a possibility of encountering corrosive or toxic material, the client shall be requested to inform the person in charge of hydro-blasting of any precautions that may be necessary, including the collection and disposal of waste materials.

7.4 Operators should have clear access to the workplace, a safe working platform and secure footing. No hydro-blasting shall be performed from a ladder or other improvised device. Material being cleaned shall be secured to prevent movement and no object should be physically / manually held while cleaning. The area in which work is to proceed shall be kept clear of hose build-up, loose items and debris to prevent tripping and slipping hazards.

7.5 Access by unauthorized persons into the area where hydro-blasting is taking place shall be prevented. The area shall be cordoned off and warning notices displayed in highly visible locations. The perimeter should be outside the effective range of the nozzle or suitable shielding shall be installed to guard against accidental entry and exposure.

7.6 The operator shall inform all personnel likely to require access to the area that hydro-blasting is in progress. Personnel entering the hydro-blasting area should wait until the jet is stopped and their presence is known. Personnel wishing to have the jet stopped shall approach any employee other than the operator. The operator should not be distracted until the jet has been stopped.

7.7 Front, back, and side shields shall be used, where feasible, to safeguard personnel and equipment against contact with grit, or solids removed by hydro-blasting.

7.8 All personnel working or entering the barricaded area while hydro blasting is in progress shall wear the required personal protective equipment.

7.9 Pressure shall be increased slowly on the system while it is being inspected for leaks and/or faulty components. All leaks or faulty components shall be repaired or replaced. The system shall be de-pressured for repairs.

7.10 The pump unit shall not be started and brought up to pressure unless all employees are in their designated position. The nozzle is held in or directed at work piece and the lance or gun securely held. The system shall be operated at the lowest working pressure and care shall be taken to ensure the system is never pressurized beyond 40% of the rated burst pressure of any of the components.

7.11 Apart from operational procedures, no attempt shall be made to adjust any nut, hose connection, fitting, etc. while the system is under pressure. The pumps shall be stopped and any pressure in the line discharged prior to making any such adjustment. Care should be taken to release the pressure in the dry shut-off gun and the line when the unit is switched off.

7.12 If, for any reason, the water flow does not shut off when the trigger or foot pedal is released, work shall cease until the item has been replaced or repaired.

7.13 While operating, employees shall be safely positioned and if any person should enter the working area, hydro-blasting shall be stopped.

7.14 The system shall be shut down and depressurized any time:
- 7.14.1 The barricade is violated,
- 7.14.2 The equipment malfunctions (special attention should be given to the dump control valve), repairs need to be made or the system is left unattended.
- 7.14.3 If any changes in conditions, or any new hazards are introduced.
- 7.14.4 If plant or work alarms sounded.

7.15 All hoses shall be protected from being run over and crushed by vehicles, forklifts, etc.

7.16 High-Pressure guns and/ or high-pressure foot pedals shall not be locked into the energized position by the means of wedges or other devices to prevent release of pressure in the case of an emergency. All hand-held equipment must have a manually controlled operating valve.

Team Operations Procedure

8.1 The operation of high-pressure water blasting equipment shall be by two or more operators based on the equipment being used and nature of the job. These operators shall work as a team with a Leadman in charge.

8.2 One operator from the team shall hold the lance, gun, or delivery hose, with the nozzle mounted on it, and control the foot pedal when used. His primary duty is to direct the jet.

8.3 The second operator of the team shall attend the pump unit; keep close watch on the first operator for signs of difficulty or fatigue. Watch the surrounding area for entry by other persons or unsafe conditions and monitor the status of all the visible components of the pressurized system.

8.4 Additional operators are required in the following circumstances:
8.4.1 To assist the first operator with the handling of the lance.
8.4.2 To provide communication if lance operator is out of sight of the pump operator.

8.5 The team members should rotate their duties (assuming appropriate experience levels) during any job to minimize fatigue to the gun operator. Close supervision shall be maintained while training of inexperienced personnel.

8.6 Before starting a hydro-blasting operation, the team members shall agree on a code of signals to be used during the operation of the equipment.

Shot Gunning Operations

9.1 The person operating the nozzle shall have direct control of the dump system.
Note: Any special jobs requiring someone else to control the dump system must have a written and approved policy “Variance” from Safety Department before starting work.

9.2 A pressurized system shall never be left unattended.

9.3 When more than one shot gunning operation is being performed within the same area, a physical barrier shall be installed or a minimum of twenty-five [25’] feet shall be maintained between operators of high-pressure guns. At

no time shall operators of high-pressure guns be in the position of facing each other while the systems are energized.

9.4 Objects to be cleaned shall never be held by another person but will be properly secured by designed equipment.

9.5 The point where the hose connects to the shotgun shall be shrouded by a protective device such as a heavy-duty hose and must be a minimum of 5 feet in length, to prevent injury to the operator in the event of a leak in the hose or fittings at the shotgun.

9.6 The minimum length of the gun barrels is determined by the system pressure, and is established as follows:

9.6.1 Pressure Washing – gun barrels shall be no less than thirty-six inches [36”] from the triggering device to the nozzle.

9.6.2 Hydro blasting - gun barrels shall be no less than forty-eight inches [48”] from the triggering device to the nozzle.

9.6.3 Ultra-High Pressure - guns shall be a no less than of fifty-two [52”] inches in length, from nozzle to shoulder stock.
Note: Any special jobs requiring modification to shorten the barrel length to less than the above limits must have a written and approved “Variance” from Safety Department before starting work.

9.7 Steel braided hoses should be used on all air or nitrogen operated fail-safe systems to keep system from being activated by flow interruptions from someone stepping on the hose or running it over.

Flex Lancing Operations

10.1 The operator controlling the flex lance shall also control the high-pressure foot pedal.
Note: Any special jobs requiring someone else to control the foot pedal must have a written and approved policy “Variance” before starting work.

10.2 A positive method shall be used to prevent the nozzle from reversing direction inside the item being cleaned. A properly sized anti-reversal device

(stinger assembly attached to a nozzle to prevent it from turning around inside a pipe or large tube) shall be used throughout the task. The combined length of the hose connection, stinger, and nozzle shall be a minimum of 1.5 times the diameter of the pipe being cleaned unless the pipe being cleaned has a "T" then the combined length shall be 3 times the diameter of the largest pipe.

10.3 During manual operations, the entrance to a line or pipe shall not be cleaned with a nozzle containing back jets without adequate shielding.

10.4 The clearance between the outside diameter of the hose, lance and nozzle assembly and the inside wall of the item being cleaned shall be sufficient to allow adequate washout of water and debris.

10.5 During manual operation, the nozzle shall be inserted into the tube prior to pressurizing. Conversely, the system shall be de-pressurized before removal of the nozzle from the tube.

10.6 A thirty-six inch [36”] stinger or flex-lance guard shall be used on all flex-lances.
Note: Any special jobs that would prohibit the use of the 36” stinger or flex lance guard must have a written and approved policy “Variance” from Safety Department before starting work.

10.7 Where the length of the nozzle and rigid coupling is less than the inside diameter of the pipe, a length of rigid pipe of not less than the diameter of the pipe being cleaned should be fitted directly behind the nozzle, or a suitable safety shield should be provided to protect the operator. This is to prevent the nozzle from turning around and doubling back towards the operator.

10.8 All flex-lances shall be marked at twenty-four, thirty-six, and forty-eight-inch intervals from the tip in a different color or pattern.

Rigid Lancing Operations

11.1 The operator inserting the nozzle shall have direct control of the dump system.
Note: Any special jobs requiring someone else to control the foot pedal must have a written and approved policy "Variance" from Safety Department before starting work.

11.2 The clearance between the outside diameter of the lance and nozzle and the inside wall of the item being clean shall be sufficient to allow adequate washout of water and debris.
Note: Symptoms of insufficient clearance would be low flow exiting around the lance and pressure buildup in the tube causing the lance to back out of the tube with the potential for injury to operators.

11.3 When under manual operation, the nozzle shall be inserted into the tube prior to pressurizing. Conversely, the system shall be de-pressurized before removal of the nozzle from the tube, unless proper shielding is provided.

11.4 When lancing tubes with a rigid lance, a guard should be installed where practical, around the lance to prevent the lance from being inadvertently withdrawn.

Automated Blasting Operations

12.1 Automated high-pressure cleaning is a highly specialized field. Division Manager approval is required for job assignment following completion of designated training.

12.2 All high-pressure hose larger than ½" I.D. shall be equipped with double whip checks attached at couplings.

12.3 All control panels, lever actuated pressure sleds, cable reels and the like shall be secured in such a manner as to prevent movement during the cleaning operation.

12.4 System shall be de-energized prior to any required repairs or relocation of equipment.

12.5 All rigid lances shall be a minimum of ¾" I.D. schedule 120 stainless.

12.6 Operators shall be stationed at control panels at all times while system is pressurized.

Pressure Washing Procedures [cold & hot]

13.1 The pressure washing classification ranges from 1,000 to 4,000 psi, however, all pressures above 1000 psi for cleaning shall be considered high-pressure cleaning. All criteria for general hydro blasting apply, with only the following differences accepted without a policy variance:
13.1.1 Barrel length can be no less than (36") thirty-six inches (without variance)
13.1.2 Metatarsal rubber boots must be worn.
13.1.3 Safety glasses w/side shield and face-shield must be worn.

13.2 All burner units shall be equipped with a high-limit control switch. If the temperature of the water should exceed its operating temperature the control will turn the burner off.

13.3 All units shall be shut down prior to fueling.

13.4 Proper ventilation is required at all times.

13.5 Units are not to be operated in an explosive or combustible atmosphere.

13.6 Operating temperature of the burner shall not exceed 1900 F.

13.7 No repairs shall be made to unit until burner and related equipment has had sufficient time to cool to a safe temperature.

13.8 Check Customer requirements for "Hot Work Permit" prior to lighting the burner.

Ultra-High-Pressure Procedures

14.1 Ultra-High-Pressure work is a highly specialized field. New hires shall not be allowed to operate this equipment. Training for Ultra- High Pressure and assignment to Ultra-High-Pressure work shall not occur without Division Manager approval.

14.2 All Ultra-High-Pressure guns shall be a MINIMUM of fifty-two [52"] inches in length, from nozzle to shoulder stock.

14.3 Ultra-High-Pressure hose from the gun to the "Tumble-Box" shall be a MAXIMUM of fifteen [15'] feet in length. This is to minimize any delay in de-energizing the system when either of the dual triggers is released.

14.4 All Ultra-High-Pressure guns shall be equipped with dual triggers.

14.5 Any modifications to equipment or procedures require the prior approval of the Safety Department.

On-line Cleaning Operations

14.6 Rigid lance shall be constructed of schedule 120 seamless stainless steel. Three-quarter inch I.D. [3/4"] and a maximum length of seventeen [17'] feet.

14.7 A high volume/high pressure foot pedal rated at 120 GPM shall be used.

14.8 Maximum operating pressure shall be 6,000 PSI when a "TEE" fitting is used for cleaning and 3,000 PSI when a straight tip is required.

14.9 An ANTI-WITHDRAWL device shall be utilized to attach to the opening to prevent the lance from withdrawing while system is energized.

14.10 Rigging of cables or other devices to handle system back pressure shall be such that they do not pull off-center to create any potential bowing of the lance.

14.11 Fire Retardant Clothing (FRC's) and heat resistant PPE shall be required during cleaning operations. This to include, but not limited to, gloves, and dark green face shield.

14.12 This procedure requires a two-person operation. One person to operate the foot pedal and one to operate the lance. Both individuals shall be in visual contact at all times.

Personal Protective Equipment

14.13 This section identifies the personal protective equipment required when operating hydro blasting equipment, or in close proximity (25 feet) of hydro blasting operations.

14.14 Head Protection - All operations shall be issued suitable head protection (hard hat) that shall be worn.

14.15 Eye and Face Protection - Eye protection adequate with proper fit, shall be provided to all operators of high-pressure water jetting equipment, and must be worn within the working area. This will include a combination of safety glasses/goggles and a face-shield. Where liquids liable to cause eye damage are encountered, it may be necessary to use either a combination of visor and goggle or a full hood with shield.

14.16 Body Protection - All operators shall be supplied with and will wear suitable waterproof clothing having regard to the type of work being done. Waterproof clothing should provide full cover to the operator, including arms, legs and torso.

14.17 Hand Protection - Hand protection consisting of waterproof or chemical resistant gloves shall be supplied to and worn by all operators.

14.18 Foot Protection - Foot protection consisting of waterproof, steel toes knee boots shall be supplied and worn by all operators. Additionally, a metatarsal guard shall be supplied to and worn by all operating or within the barricades of the blasting operation.

14.19 Hearing Protection - Most high-pressure water blasting equipment produces noise in excess of 90 dba and so adequate hearing protection equipment (muffs and/or plugs) will be supplied to and worn by all operators.

14.20 Respiratory Protection - In accordance with our Respiratory Protection Program, respiratory protection shall be issued to and worn by all operators as required.

14.21 Equipment Limitations - It should be recognized that protective equipment may not necessarily protect the operator from injury by DIRECT high-pressure water jet impact.

Training Requirements

14.22 All employees shall be trained prior to performing any hydro-blasting work. Only trained personnel shall operate high pressure water blasting equipment and supervise the training of new operators.

14.23 An explanation of the hazards of hydro-blasting and the importance of seeking medical attention if an accident occurs where high pressure water penetrates skin.

14.23.1 Training shall include a demonstration (live or video) of the potential hazards presented from hydro-blasting to the human body by cutting through a piece of lumber, concrete or rubber boot.

14.24 All new employees shall receive a minimum of eight [8] hours of "Hands-On" training prior to any job assignment in the field that does not have hands-on supervision. Such training shall include:

14.24.1 The minimum personal protective equipment shall be explained. Instructions shall be given as to when and how specific clothing and other types of protective devices shall be worn according to the type of work performed, locations, etc.

14.24.2 The operation of the system shall be explained pointing out potential problems and proper corrective action.

14.24.3 The operation of the system shall be explained. The importance of not tampering with any control devices as well as the importance of keeping them in proper working order shall be stressed.

14.24.4 It shall be pointed out that the valves and seating surfaces in pressure regulating devices encounter high wear during high pressure water blasting. These items require frequent inspections, maintenance, and/or replacement in order to provide proper operation.

14.24.5 The proper method of connecting hoses including layout without kinks, protection from excessive wear, and proper tools to use on coupling and fittings shall be explained.

14.24.6 The proper stance for sound footing and how to use the various devices for lancing, shot gunning, and moleing shall be demonstrated. The trainee, under close supervision shall use various devices while the unit is slowly pressurized.

14.24.7 Personnel shall demonstrate knowledge and skill in proper operations of equipment through practical appliance.

Nature of Hydro-Blast Injuries

14.24 The velocity of the jet can be derived from the following equation: V = 2qp/k Gruner (1963) where V = velocity in feet per second, g = acceleration due to gravity i.e. 32 ft per sec/sec, p = ejection pressure in lbs. per square foot and K = density of the injected material in lbs. per cubic feet. With water at pressures up to 10,000 psi., velocities in the order of 1200 ft. per sec or 818 mph can be encountered.

14.25 The kinetic energy dissipated on impact can be derived from E.E. = ½ MV^2 where M is the mass of water ejected and V the velocity of impact. Even with parts of the body that have a capacity to absorb only small quantities of water say 0.036 oz. (1 gramme) as in the case of the finger the energy expended may be of the order of 1,500-foot lbs. With other parts of the body with greater capacity the energy levels will be that much higher.

14.26 The jet therefore has some of the qualities of a high velocity missile in producing injury. The entrance wound will tend to be small and give little indication of the extent and damage to deeper tissues. For a variable extent along the tract caused by the penetration of the jet, the surrounding tissues will be damaged if not killed by the shock waves developed as the kinetic energy of the jet is dispersed. Deeper tissues will be lacerated depending on the depth of penetration and the anatomy of the area. With abdominal wounds there may be extensive laceration and damage to abdominal viscera. Water will be forcefully injected into the tissues. It may be dispersed widely and will tend to follow the natural cleavage planes of the tissues. Where the tissues are constricted as in the hand and foot, considerable pressure may be exerted on nerve bundles and blood vessels, which may lead to further devitalization.

14.27 Depending upon the degree of pollution of the water in the jet, injuries may be contaminated both by infection and foreign matter carried into the wound by the water.

First Aid Treatment of Hydro-Blast Injuries

14.28 The first and most important point to be remembered is that all injuries due to high pressure jets must be treated very seriously and all should be taken to the hospital.

14.29 The surface wound may vary from a long and ragged laceration to a mere pin hole surrounded by an area of pale swelling. There may be considerable pain, or the wound may be numb. Since the surface wound does not in any way indicate the extent and nature of damage to underlying tissues, the first aid treatment must be based on the assumption that injury to deeper tissues has occurred.

14.30 The surface wound should be dressed to control bleeding and prevent further contamination. Where limbs have been injured it is best to support and immobilize them as for fractures. For injuries to the trunk, the patient should be nursed in the coma position and the airways kept open. Simple resuscitative measures and treatment of shock may be administered. The patient must be taken to the hospital.

Hospital Treatment of Hydro-Blast Injuries

14.31 In the event that a person is injured by the impact of a water jet, the injury caused may appear insignificant and give little indication of the extent of the injury beneath the skin and the damage to deeper tissues. Large quantities of water may have punctured the skin, flesh and organs through a very small hole that may not even bleed.

14.32 Wounds should be packed open, or closed loosely to allow drainage, if severe bleeding is not a problem. Transport immediately to the hospital.

14.33 Immediate hospital attention is required, and medical staff must be informed of the cause of injury. To ensure that this is not overlooked, all operators engaged in hydro-blasting will carry an immediately accessible water-proof

card which outlines the possible nature of the injury and bears the following text:

14.33.1 "This man has been involved with high pressure water jetting at pressures up to 40,000 psi with extremely high jet velocity. Please take this into account when making your diagnosis. Unusual infections with micro- aerophilic organisms occurring at lower temperatures have been reported. These may be gram negative pathogens such as are found in sewage. Bacterial swabs and blood cultures may therefore be helpful."

14.34 Treatment should follow the accepted principles for deep penetrating muscle wounds. The surface wound should be excised, and the track of the jet carefully explored. Immediate wide surgical decompression should be carried out, especially in hand and foot injuries followed by careful debridement along the length of the track.

14.35 If high pressure water penetrates the skin, the National Poison Control Center Office, phone number 1-412-681-6669 may be contacted for best medical measures.

14.36 Where medical examination is not immediately possible in remote situations, first aid measures should be confined to dressing the wound and observing the patient closely until medical examination has been arranged.

Abrasive Blasting

It is the goal of SEI Solutions to significantly reduce employee exposure to crystalline silica, a serious health hazard, and other sandblasting-related conditions that affects the respiratory system and can lead to chronic illness and possible death.

The Company will ensure that all potential sources of Abrasive Blasting within our facility(s) or host Companies are evaluated. This standard practice instruction is intended to address comprehensively the issues of; evaluating and identifying potential sources of Abrasive Blasting, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures, and protective measures for employees.

Administration

Lance Hodge, Safety Manager responsible for all facets of this program and has full authority to make necessary decisions to ensure success of the program. The Safety Manager is the sole person authorized to amend these instructions and is authorized to halt any operation of the company where there is danger of serious personal injury.

The Company will review and evaluate this standard practice instruction in accordance with the following:

- On an annual basis.
- When changes occur to governing regulatory sources that require revision.
- When changes occur to related company procedures that require a revision.
- When facility operational changes occur that require a revision.
- When there is an accident or close-call that relates to this area of safety.
- Anytime the procedures fail.

Effective implementation of this program requires support from all levels of management. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

Related Programs

The following safety programs are used in consonance with this program:

- Confined Space Entry Program
- Respiratory Protection Program
- Hazard Communication Program

Chapter Organization:

This chapter is organized in nine parts.

Part I provides a description of silica.

Part II covers the various work activities that employees perform where their exposures to respirable crystalline silica may exceed permissible limits.

Part III describes the health hazards associated with crystalline silica exposures.

Part IV discusses how to prevent or reduce exposures to crystalline silica.

Part V addresses standards that may be cited as part of crystalline silica enforcement.

Part VI addresses company policy regarding employee training

Part VII addresses monitoring, spill and leak procedures and emergency first aid procedures

Part VIII tool selection

Part IX addresses medical surveillance

General

Silica is a one of several chemicals included in the larger classification of silicon dioxide (SiO_2). Silicon dioxide is a chemical compound that includes crystalline silica (sand, quartz), amorphous silica (noncrystalline), and silicates (aluminum silicate). Crystalline silica is the basic component of sand, quartz, and granite rock. This form of silica is obtained from the earth's crust through mining. Crystalline silica can be processed into other materials including silica flour. Silica flour is produced through the milling of crystalline silica into a fine powder.

Crystalline silica is present in several forms, including quartz, tridymite, and cristobalite.

Quartz is the most common mineral in the earth's crust and is recognized by its colorless crystals or white powders, that are also odorless and tasteless. Other common names for quartz include crystallized silicon dioxide and quartz silica. Tripoli is an unusual type of quartz that is characterized by the presence of micro-crystals of quartz.

Tridymite is the most potent form of the crystalline silicas. Tridymite is formed from the heating of quartz and is most often found in conjunction with cristobalite. Both of these forms of crystalline silica are transparent, tasteless crystals.

Cristobalite is formed when quartz or amorphous silica is heated. It is also formed when diatomaceous earth is calcined (heated strongly with limestone) in the presence of an alkaline flux and converted to cristobalite. Calcined diatomaceous earth can contain from <1 percent up to 74 percent cristobalite.

Amorphous silica is a form of noncrystalline silica that can be annealed or melted into a fused compound; various names for the end-product of this processes are fused quartz, fused silica, quartz glass, vitreous glass, and vitreous silica.

Diatomaceous earth is a form of amorphous silica that can form cristobalite when calcined.

Tripolite is another common name for diatomaceous earth.

Silicates are compounds that contain silicon dioxide and elements such as aluminum, iron, potassium, magnesium, and/or calcium. Silicates exist in fibrous and nonfibrous forms. Examples of nonfibrous forms include Portland cement, talc, mica, soapstone, and clays. (Asbestos is an example of a fibrous silicate, but is dealt with as a separate health risk.)

Of the silicon dioxides, crystalline silica is the most hazardous to workers because exposure to this type of silica can cause silicosis, a pneumoconiosis associated with the inhalation of crystalline silica particles. Amorphous silica may still cause adverse physiological reactions in the respiratory system, but is far less toxic than crystal-line silica. Exposures to nonfibrous silicates can also lead to pneumoconiosis, but the progression is slower than that of crystalline silica and is often times nondisabling.

Work Activities and Employee Exposure

Workers in sandblasting, various manufacturing, construction, and agricultural processes are exposed to respirable crystalline silica. High exposures have been found, or are anticipated, when employees are working in the following industries or performing the following work activities:

- Manufacturing
  - Various metal casting foundries
  - Glass manufacturing
  - Clay refractory manufacturing
  - Asphalt paving material manufacturing
  - Cut stone and stone products manufacturing
  - Pottery and ceramic products manufacturing
  - Abrasives and abrasive products manufacturing
  - Paint and rubber manufacturing, where powdered silica flour is used
  - Food and beverage preparation, where calcined diatomaceous earth is used as a filtering media

- Construction
  - Chipping, hammering, and drilling of rock
  - Crushing, loading, hauling, and dumping of rock
  - Abrasive blasting using an abrasive containing silica or sand
  - Abrasive blasting of/on concrete (regardless of the abrasive used)
  - Sawing, hammering, drilling, grinding, and chipping of concrete or masonry
  - Demolition of concrete and masonry structures
  - Dry sweeping or pressurized air blowing of concrete, rock, or sand dust (NIOSH 1996)

- Agriculture
  - Onion harvesting, topping, sorting, grading, and bagging operations
  - Potato harvesting, sorting, grading, washing, and bagging operations

Health Hazards

When workers inhale particles of crystalline silica, the smaller particles can become deposited in the lower lungs. Crystalline silica has a toxic effect that leads to the development of fibrotic nodules and scarring around the deposited silica particles. This fibrotic condition of the lungs is called silicosis.

Silicosis is a disabling, progressive, and sometimes fatal disease. Symptoms of silicosis include coughing, difficulty in breathing, bluish skin, and shortness of breath. The National Institute for Occupational Safety and Health (NIOSH) estimates that there are more than one million American workers at risk of developing silicosis.

There are three types of silicosis that a worker can develop:

1. Chronic silicosis, which usually occurs after 10 or more years of exposure to crystalline silica at relatively low concentrations.

2. Accelerated silicosis, which results from exposure to high concentrations of crystalline silica and develops five to 10 years after the initial exposure.

3. Acute silicosis, which occurs where exposure concentrations are the highest and can cause symptoms to develop within a few weeks to four or five years after the initial exposure

The development of silicosis depends on several factors, including the amount and kind of dust inhaled; the percentage of free silica in the dust; the form of silica; the size of the particles inhaled; the duration of exposure; the resistance capacity of the individual; and, the presence or absence of complications, such as infection.

Smoking may also increase the rate at which the symptoms of silicosis occur.

In addition to silicosis, exposure to respirable crystalline silica dust can lead to chronic airway obstruction and bronchitis, tuberculosis, and possibly lung and/or stomach cancer.

A worker's exposure to any airborne contaminant is determined by conducting personal sampling of the air in the worker's breathing zone. Crystalline silica exposures that can lead to silicosis are found in the respirable fraction of dust produced during certain work activities. The respirable fraction (< 10 m) are those particles that are small enough to penetrate the lower lungs when a worker inhales. To determine a worker's exposure to crystalline silica, a sample of the respirable fraction of dust is collected while the employee is performing the work activity.

Once the air sample is collected, it is taken to a lab where it is weighed to determine the amount of respirable dust present. The sample is then analyzed to determine the percentage of free silica. The permissible exposure level (PEL) for respirable dust containing crystalline silica is determined by calculating the maximum respirable dust concentration permissible in the

worker's breathing zone based on the percent of free silica present. The higher the percentage of free silica present in the sample, the lower the permissible exposure level to respirable dust.

Prevention & Exposure Reduction

Based on recommendations by The National Institute of Occupational Safety and Health, SEI Solutions will take the following procedures to reduce worker exposures to respirable crystalline silica and ensure employee exposure stays below the threshold limit values (TLV's).

1. Recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Awareness and planning are keys to the prevention of silicosis.

2. Do not use silica sand or other substances containing more than 1 percent crystalline silica as abrasive blasting materials. Substitute less hazardous materials.

3. Use engineering and administrative controls and containment methods to control the hazard and protect adjacent workers from exposures (e.g., local exhaust ventilation, wet methods, blast-cleaning machines and cabinets, etc.).

4. Respirators or CE blasting hoods/helmets are required to protect the health of the worker whenever blasting takes place.

5. Air for abrasive blasting respirators must be free of harmful quantities of dust, mist, or noxious gases.

6. Routinely maintain dust control systems to keep them in good working order.

7. Practice good personal hygiene to avoid unnecessary exposure to other worksite contaminants, such as lead.

8. Wear disposable or washable protective clothes at the worksite.

9. Shower (if possible) and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.

10. Conduct air monitoring to measure worker exposures to respirable crystalline silica and ensure that controls are providing adequate protection to workers.

11. Protective clothing and equipment must provide protection to the eyes, face, and body of the operator and protection must be provided to any other personnel working in the vicinity of abrasive blasting operations.

12. Provide periodic medical examinations for all workers who may be exposed to respirable crystalline silica.

13. Post warning signs to mark the boundaries of work areas contaminated with respirable crystalline silica.

14. Report all cases of silicosis to OSHA.

15. Dust shall not be permitted to accumulate on the floor or on ledges outside of an abrasive-blasting enclosure, and dust spills shall be cleaned up promptly. Aisles and walkways shall be kept clear of steel shot or similar abrasive which may create a slipping hazards.

16. During blasting operations the blast nozzle shall be bonded and grounded to prevent the buildup of static charges.

17. The blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

18. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

19. Organic abrasives which are combustible shall be used only in automatic systems.

Engineering Controls

The Company will install and maintain engineering controls where possible to eliminate or reduce the amount of silica in the work area and to reduce build-up of dust on equipment and machinery surfaces. Preventative maintenance will be conducted as a high priority to ensure effectiveness of the Engineering Controls. Where possible controls will include, but are not limited to:

- General exhaust ventilation systems
- Local ventilation systems
- Dust collection system
- Enclosed cabs for workers
- Water sprays for dust reduction
- Wet Drilling when drilling operations are in effect
- Drill platform skirts when drilling operations are in effect

Administrative Controls

Where Engineering Controls are not feasible Administrative Controls will be attempted where possible to eliminate or reduce the amount of silica or environmental dusts each worker is exposed to. Where possible controls will include, but are not limited to:

- Job-specific training programs
- Job rotation
- Job enlargement
- Job pacing variations
- Checklists for job improvement
- Policies and procedure development
- Regular job inspections and review
- Employee feedback surveys

Personal Protective Equipment

Where Administrative Controls are not feasible PPE will be selected and used through the Job Hazard Analysis Program. The Safety Manager and supervisors will ensure that equipment selected will meet the following requirements:

- It will be appropriate for the particular hazard.
- It will be maintained in good condition.
- It will be properly stored when not in use, to prevent damage or loss.
- It will be kept clean, fully functional and sanitary.

Protective clothing and PPE can present additional safety hazards. Supervisors will ensure workers wear appropriate clothing and PPE. These items will be worn so as not create additional hazards.

Personal Clothing and Jewelry

Personal clothing and jewelry will be monitored by the immediate supervisor. Clothing or jewelry that could become entangled in tools, equipment or machinery or of an excessively flammable nature will be prohibited.

Documentation

PPE requirements will be documented on a “Protective Measures Determination” form (Job Hazard Analysis Program) and properly filed.

Types of PPE

Where required, PPE will include, but are not limited to:

- Abrasive Blasting Gloves
- Appropriate Respirators
- Body Shields
- Aprons
- Non-slip and steel-toed shoes
- Full eye protection
- Full-body jump suits for dust protection
- Hard hats
- Caps
- Hair nets
- Footguards

Entry Control

Those work areas meeting the criteria for delineation as an “Abrasive Hazards Work Area” will be restricted only to trained and authorized employees. Physical barriers, ropes, fencing or any other equally effective means of entry control may used to control entry.

Hazard Marking

Abrasive Hazards Work Areas will be identified by signage and color coding as needed. A sign reading "DANGER ABRASIVE HAZARDS WORK AREA" or similar language will be used to satisfy the requirement for a sign.

Hazard notification

This Company shall inform employees working near Abrasive Hazards Work Areas, by posting danger signs, conducting awareness training, or by any other equally effective means, of the existence and location of and the danger posed by abrasive blasting.

OSHA Citable Standards

OSHA standards that may be cited as part of crystalline silica enforcement include:

- 29 CFR 1910.1200 or 1926.59, Hazard Communication

- 1910.134 or 1926.103, Respiratory Protection

- 29 CFR 1910.145 or 1926.200, Accident Prevention and Warning Signs
- 29 CFR 1910.94 or 1926.28, 1926.55, 95, 1926.100-103 and 1926.300, Abrasive Blasting, Breathing Air, Enclosures, Controls
- 29 CFR 1910.141 or 1926.27 and 1926.51, Sanitation, as it pertains to personal hygiene
- 29 CFR 1910.132 or 1926.28, 1926.95 and 1926.100-105, General Personal Protective Equipment
- 29 CFR 1926.20, Safety and Health Program
- 29 CFR 1926.21, General Training
- 29 CFR 1910.20 or 1926.33, Access to Employee Exposure and Medical Records
- 29 CFR 1910.244, Portable Tools and Equipment
- CFR 1910.1000, Air Contaminants
- 29 CFR 1910.134, Respiratory Protection
- 29 CFR 1910.94, Ventilation
- 29 CFR 1910.146, Confined Space Program

Training

All employees subject to silica exposure shall be provided information about adverse effects and work practices, including HAZCOM, and the use and care of personal protective equipment.

Types of Training

The company will determine whether training required for specific jobs will be conducted in a classroom or on-the-job. The degree of training provided shall be determined by the complexity of the job and the Abrasive Blasting exposure hazards associated with the individual job.

- Initial Training. Prior to job assignment, this Company shall provide training to ensure that the hazards associated with Abrasive Blasting are understood by employees and that the knowledge, skills and personal protective equipment required are acquired by employees. The training shall as a minimum include the following:

- Each authorized employee shall receive training in the recognition of applicable hazards involved with the particular job and job site, as well as the methods and means necessary for safe work.

- The specific nature of the operation which could result in exposure to Abrasive Blasting materials.

- The purpose, proper selection, fitting, use and limitation of personal protective equipment (PPE)

- The adverse health effects associated with excessive exposure to Abrasive Blasting materials.

- The engineering controls, administrative controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.

- The contents of any compliance plan in effect.

- The employee's right of access to records under 29 CFR 1910.20.

Retraining

Retraining shall be provided for all affected employees as a minimum under the following conditions:

- Whenever there is a change in job assignments.

- Whenever there is a change in personal protective equipment.

- Whenever there is a change in equipment that presents a new hazard.

- Whenever there is a change in processes that presents a new hazard.

- Whenever their work takes them into hazardous areas.

- Whenever there is a change in Abrasive Blasting safety procedures.

- Whenever safety procedure fails resulting in a near-miss, illness, or injury.

Additional Retraining

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this Company has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards, or use of equipment or procedures.

The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

Certification

This Company shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

Monitoring and Measurement Procedures

- Eight Hour Time Weighted Average (TWA) Evaluations
    - Where possible 8hr TWAs will be taken so that the average eight-hour exposure is based on a single eight-hour sample. Air samples will be taken in the employee's breathing zone. Only qualified personnel will be selected to conduct evaluations.
- Ceiling Evaluations
    - Where possible, measurements to determine employee ceiling exposure will be taken during periods of maximum expected airborne concentrations of Abrasive Blasting materials or particulates. Each measurement will consist of a fifteen (15) minute sample or series of consecutive samples totaling fifteen (15) minutes. Air samples will be taken in the employee's breathing zone and only by qualified personnel.
- Peak and Above Ceiling Evaluations
    - Measurements to determine employee peak exposure will be taken during periods of maximum expected airborne concentrations of Abrasive Blasting materials or particulates. Each measurement will consist of a ten (10) minute sample or series of consecutive samples totaling ten (10) minutes. A minimum of three measurements will be taken on one work shift and the highest of all measurements taken will be assumed to be an estimate of the employee's exposure. Air samples will be taken in the employee's breathing zone and only by qualified personnel.
- Sampling Methods

- Sampling and analysis will be conducted in accordance with acceptable industrial hygiene practices. Sampling data will be maintained for the duration of employment of the affected employee plus 30 years.

Spill and Leak Procedures

Spill and leak procedures will largely depend on the capability and emergency procedures of this and any host Company. This Company will ensure that adequate clean up procedures are in effect in any facility owned by this company. Any time employees work with a host Company we will ensure adequate procedures are in-place for the protection of all employee's (host and contractor) and the surrounding area.

Emergency First Aid Procedures

In the event of an emergency, institute first aid procedures and send for first aid or medical assistance in accordance with local procedures.

- Eye Exposure: Wash immediately with large amounts of water. Lifting the lower and upper lids occasionally, get medical attention as soon as possible.

- Skin Exposure (imbedded particulates): Immediately flush with copious amounts of water. Remove any clothing blocking exposed skin areas and flush exposed skin areas, get medical attention as soon as possible.

- Respiratory Exposure: Get the victim to open, fresh air immediately. If breathing has stopped perform CPR. Keep the victim warm and at rest. Get medical attention as soon as possible.

- Rescue Considerations. Don't become a second victim. Move the affected person from the hazardous area. If the exposed person has been overcome, initiate local emergency notification procedures. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

Tool Selection, Evaluation and Condition

The greatest hazards posed by tools usually result from misuse and/or improper maintenance. Tool selection sometimes is not considered a priority when arrangements are made to begin work. All employees will consider the following when selecting tools:

- Is the tool correct for the type work to be performed?

- Are guards installed properly and in good condition?

- Are grounding methods sufficient when working in wet conditions?

- Does the tool create sparks or heat? Has this been considered when working around flammable substances?

- Do impact tools such as chisels, wedges, or drift pins have mushroomed heads? The heads can shatter on impact, sending sharp fragments flying!

- Are wooden handled tools loose or splintered? This can result in the heads flying off and striking the user/coworkers!

- Are cutting tools sharp? Dull tools are more hazardous than sharp ones.

- Is the tool used on the proper working surface? Tools used on dirty or wet working surfaces can create a multitude of hazards.

- Are tools stored properly when not being used? Saw blades, knives, scissors and like sharp tools should be stored so that sharp edges are directed away from aisles and coworkers.

- Is there sufficient clearance for tools requiring swinging motions such as hammers, axes, picks, etc?

- Tools will be checked for excessive vibration.

- Have tools been modified beyond the manufacturers specification? If so, have the modifications been approved by a "competent person"?

Medical Surveillance

General

- Employees Covered
    - The Company shall institute a medical surveillance program for all employees.
    - For employees otherwise required by this standard to wear a negative pressure respirator, the Company shall ensure employees are physically able to perform the work and use the equipment. This determination shall be made under the supervision of a physician.

Examination

- The Company shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and are provided at no cost to the employee and at a reasonable time and place.

- Persons other than such licensed physicians who administer the pulmonary function testing required by this section shall complete a training course in spirometry sponsored by an appropriate academic or professional institution.

Medical Examinations and Consultations

Frequency

- The Company shall make available medical examinations and consultations to each employee on the following schedules:

    - Prior to assignment of the employee to an area where negative-pressure respirators are worn;

    - When the employee is assigned to an area where exposure to silicon may be at or above the permissible exposure limit for 30 or more days per year, a medical examination must be given within 10 working days following the thirtieth day of exposure;

    - And at least annually thereafter.

- If the examining physician determines that any of the examinations should be provided more frequently than specified, the Company shall provided such examinations to affected employees at the frequencies specified by the physician.

Exception

No medical examination is required of any employee if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

Content

- A medical and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems.

- A physical examination directed to the pulmonary and gastrointestinal systems, including a chest roentgenogram to be administered at the discretion of the physician, and pulmonary function tests of forced vital capacity (FVC) and forced expiratory volume at one second (FEV1).

- Any other examinations or tests deemed necessary by the examining physician.

Information Provided to the Physician

The Company shall provide the following information to the examining physician:

- A copy of this standard;

- A description of the affected employee's duties as they relate to the employee's exposure;

- The employee's representative exposure level or anticipated exposure level;

- A description of any personal protective and respiratory equipment used or to be used; and

- Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

Physician's Written Opinion

The Company shall obtain a written opinion from the examining physician. This written opinion shall contain the results of the medical examination and shall include:

- The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos;

- Any recommended limitations on the employee or on the use of personal protective equipment such as respirators; and

- A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

- A statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

- If the examining physician determines that any of the examinations should be provided more frequently than specified, the Company shall provide such examinations to affected employees at the frequencies specified by the physician.

- **Exception:** No medical examination is required of any employee if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

Content

- The Company shall instruct the physician not to reveal in the written opinion given to the Company specific findings or diagnoses unrelated to occupational exposure to asbestos.

- The Company shall provide a copy of the physician's written opinion to the affected employee within 30 days from its receipt.

- The Company shall report all cases of silicosis to the State Health Department and to OSHA as they are diagnosed..

Recordkeeping

- Where the Company has relied on objective data that demonstrates that products made from or containing asbestos or the activity involving such products or material are not capable of releasing fibers or asbestos in concentrations at or above the permissible exposure limit and/or excursion limit under the expected conditions of processing, use, or handling to satisfy the requirements of paragraph (f), the Company shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.

- The record shall include at least the following information:

    - The product qualifying for exemption;

    - The source of the objective data;

    - The testing protocol, results of testing, and/or analysis of the material for the release of asbestos;

    - A description of the operation exempted and how the data support the exemption; and

    - Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

- The Company shall maintain this record for the duration of the Company's reliance upon such objective data.

Exposure Measurements

- The Company shall keep an accurate record of all measurements taken to monitor employee exposure to asbestos as prescribed in paragraph (f) of this section.

  Note: The Company may utilize the services of competent organizations such as industry trade associations and employee associations to maintain the records required by this section.

- This record shall include at least the following information:

  - The date of measurement;

  - The operation involving exposure to asbestos that is being monitored;

  - Sampling and analytical methods used and evidence of their accuracy;

  - Number, duration, and results of samples taken;

  - Type of protective devices worn, if any; and

  - Name, social security number, and exposure of the employees whose exposures are represented.

- The Company shall maintain this record for at least thirty (30) years, in accordance with 29 CFR 1910.20.

Medical Surveillance

- The Company shall establish and maintain an accurate record for each employee subject to medical surveillance by paragraph (m) of this section, in accordance with 29 CFR 1910.20.

- The record shall include at least the following information:

  - The name and social security number of the employee;

  - A copy of the employee's medical examination results, including the medical history, questionnaire responses, results of any tests, and physician's recommendations;

  - Physician's written opinions;

  - Any employee medical complaints related to exposure to asbestos; and

    - A copy of the information provided to the physician as required by paragraph (m) of this section.

- The Company shall ensure that this record is maintained for the duration of employment plus thirty (30) years, in accordance with 29 CFR 1910.20.

Training Records

The Company shall maintain all employee training records for one (1) year beyond the last date of employment by that Company.

Vacuuming Safety Program

Vacuum trucks are used to complete a variety of industrial cleaning tasks. The suction developed by vacuum trucks can cause serious compression type injuries to tissue if a person becomes vacuumed to the hose. The noise generated by these trucks can cause temporary and/or permanent hearing loss. Employees performing work with these units must be aware of the nature of the material being handled. Flammable or combustible liquids and certain airborne dusts (coal, grains, etc.) can present an explosive environment.

Policy and Procedures are as follows:

1. Only trained and qualified personnel are allowed to operate or drive a vacuum truck.
2. Lock Out Tag Out procedures shall be followed by all employees on site during vacuum operations. Verification of lock out tag out shall be performed by Supervisor prior to the start of any work.
3. Vacuum truck shall be positioned as to provide a safe work area for all employees to perform work.
4. Vacuum truck and work area shall be barricaded prior to the start of work and maintained during commencement of shift.
5. Vacuum breaker (safety tee) shall be installed no further than 25’ of working end of vacuum hose.
6. Vacuum breaker (safety tee) shall be always manned by hose operator or additional personnel onsite. A vacuum breaker is not necessary end of vacuum hose is not manually handled by workers. (i.e., sump pit, bag house hopper)

7. Wheel chocks and grounding cables shall always be installed on vacuum truck prior to the start of vacuum operations.
8. Never run hose across roadways if possible. Block the roadway if this must be done.
9. Never attempt to use your hand or other object to remove material from the end of the vacuum hose.
10. Never open the rear door while the vacuum truck is in operation
11. Never use the hydraulic system when the oil level is not visible in the reservoir sight glass
12. Never operate the vehicle above recommended RPM's
13. Never dump material before checking if anyone is behind the rear door
14. Never raise the debris box when the vehicle moving or is on uneven ground or unstable ground
15. Never drive the vehicle when the debris box is up
16. The debris box on a vacuum truck is considered a confined space. Always use safety pins before entering and follow SEI Solutions Confined Space Entry Program.
17. Never open the bag house or cyclones when truck is in operation.
18. Never use hydraulic boom to lift anything other than the boom itself.
19. Never work under the boom.
20. Always secure the boom and any openings on the vacuum truck prior to going on any road or highway.
21. Never back up a vacuum truck without a backup person.
22. Always secure hose or standpipe when setting up a vertical run.
23. Monitor the blower temperature to ensure it does not go over the manufacture recommended temperature.
24. Always operate the blower within the recommended RPM's.

Requirements

Operators:

- **Must be at least 18 years old**
- **Must be DOT certified with a DQ file. Also, must have a CDL license to drive on a road.**

Laborers:

- **Must be at least 18 years old**
- **Must have completed vacuum truck safety course**

A Vacuuming crew consists of an Operator and a Laborer. Additional employees will be added when:

- **Physical demands exceed the capabilities of two persons**
- **Confined Space Entry is taking place**
- **Visual communications between Operator and Laborer cannot be maintained**

Vacuuming Training

All personnel will be trained prior to working on any vacuuming operations. The training will include:

- **Preparation of a Vacuum truck**
- **Vacuum Truck PPE Requirements**
- **Safety devices**

Inexperienced personnel will be paired with experienced employees until the time as which the employee demonstrates the ability and understanding of the company's safety procedures.

AERIAL WORK PLATFORMS

1.0 PURPOSE

1.1 This program establishes the minimum requirements for the operation of aerial work platforms used in the course of work performed by SEI Solutions personnel. This program addresses the basic requirements for the operation of aerial work platforms to provide access to an elevated work location.

1.2 An aerial work platform includes the following types of aerial devices used to elevate personnel to work locations above grade:

- Extensible boom platforms
- Aerial ladders
- Articulating boom platforms
- Vertical towers
- Scissor lifts
- Personal Portable Lifts

2.0 RESPONSIBILITIES

2.1 **The Program Administrator**: SEI Solutions Safety Director

This person is responsible for:

- Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements.
- Ensuring that employees receive initial and refresher training on the use of this policy.
- Maintaining training records for all employees included in the training sessions
- Ensure that only trained and qualified personnel are authorized to operate aerial work platforms by conducting periodic field audits to check for valid training.

2.2 **Maintenance Manager:**

This person is responsible for:

- Ensure that aerial units and related equipment that are owned by SEI Solutions are properly inspected and maintained.

2.3 Project Managers, Superintendents and Supervisors:

These people are responsible for:

- Ensure that prior to use all personnel assigned to operate an aerial work platform are properly trained in their use, limitations, and associated hazards.
- Ensure that aerial units and related equipment for which SEI Solutions is responsible are properly inspected prior to use.
- Ensure that applicable personal protective equipment, including personal fall protection equipment, is available for use as required.
- Ensure the TSTI and Job Safety Analysis addresses the hazards associated with the unit operation.

2.4 Aerial Work Platform Operator:

These people are responsible for:

- Maintain the training and competency required to properly operate the specific type of aerial lift according to the manufacturer's instructions.
- Ensure that the aerial work platform is properly inspected prior to use and documented on the SEI Solutions Mobile Equipment Inspection Checklist.
- Use required personal fall protection equipment and other personal protective equipment necessary for the task(s) to be performed.
- Ensure that the aerial work Platform is not overloaded beyond rated load capacities.
- Ensure the Job Safety Analysis addresses the hazards associated with the unit operation and that it has been reviewed with the appropriate personnel.

3.0 DEFINITIONS

3.1 Aerial Ladder -An aerial device consisting of a single- or multiple-section extensible ladder.

Aerial Lift -Vehicle-mounted aerial lifts or devices used to position personnel that include the following:

- Extensible boom platforms
- Aerial ladders
- Articulating boom platforms
- Vertical towers
- These devices are made of metal, wood, fiberglass reinforced plastic (FRP), or other material and are powered or manually operated, whether they are capable of rotating about a substantially vertical axis**.**

Aerial Work Platform -A mobile or portable aerial device designed to provide personnel with a platform equipped with a power-assisted means to access an elevated work location. These devices include aerial lifts, scissor lifts, and personal portable lifts.

Articulating Boom Platform -An aerial lift with two or more hinged sections.

Competent Person -One who has been trained in the operation of an aerial lift and has obtained the skill necessary to satisfactorily operate the unit. The Competent Person is also capable of identifying existing and predictable hazards in the surroundings or working conditions where the aerial lift is to be operated.

Extensible Boom Platform -An aerial lift (except ladders) with a telescopic or extensible boom. Telescopic derricks with personnel platform attachments are considered to be extensible boom platforms when used with a personnel platform.

Full Body Harness -A design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with the capability of attaching to other components of a personal fall arrest system.

Insulated Aerial Device -An aerial device designed for work on energized lines and apparatus.

Personal Portable Lift -A lightweight portable aerial device designed with a platform for one person to access limited heights.

Platform -Any personnel-carrying device (basket or bucket) which is a component of an aerial device.

Stock Picker -A power-driven or manually pushed vertical mast aerial device designed with a platform for one person to access elevated locations primarily to manage stock inventories.

Vertical Tower -An aerial lift designed to elevate a platform in a substantially vertical axis.

4.0 GENERAL REQUIREMENTS

4.1 Personnel must always stand firmly on the floor of the basket and must not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

4.2 The operator must wear a full body harness with an acceptable lanyard. A fall restraint lanyard is preferred. The fall restraint lanyard should be attached to a designated anchor point, and the length should be adjusted to prevent ejection from the basket. A self-retracting lanyard is also acceptable if attached to a designated anchor point at waist level or above.

NOTE: Attaching the lanyard to an adjacent pole, structure, or equipment while working from an aerial work platform shall not be permitted.

EXCEPTION- When working from an elevated scissors lift (ANSI A92.6 series), a worker need only be protected from falling by a properly designed and maintained guardrail system. However, if the guardrail system is less than adequate, or the worker leaves the safety of the work platform, an additional fall protection device would be required. Also, if the manufacturer recommends or mandates that personal fall protection be use. The operator and passengers must adhere to the manufacturers' safety policy for safe operation.

4.3 Provisions must be established for emergency response concerning retrieval of the operator stranded in an elevated position. An assessment of the exposures associated with the activity to be performed must be completed to ensure thorough hazard recognition. Measures necessary to facilitate emergency response and rescue need to be identified, e.g., retrieval from entanglement with overhead obstructions or contact with electrical power lines. A second person must be assigned to observe the operator while working at heights and subject to fall arrest from the unit.

4.4 Aerial lifts may be "field modified" for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by any equivalent entity.

5.0 UNIT INSPECTIONS

5.1 Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. A visual inspection of the aerial lift components on the SEI Solutions Equipment Inspection Checklist and a test of all controls and safety devices, including a full operational test, must be completed on the day used prior to operation. The results of the inspection must be documented in SEI Solutions Mobile Equipment Inspection Checklist.

5.2 All units owned, rented, or leased by SEI Solutions must be inspected prior to use and annually thereafter.

6.0 UNIT OPERATION

6.1 Only authorized persons shall operate an aerial lift.

6.2 The vehicle must have a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.

6.3 Boom and basket load limits specified by the manufacturer shall not be exceeded. The insulated portion of an aerial work platform shall not be altered in any manner that might reduce its insulating value. A minimum of 10 feet should be maintained from energized electrical power lines.

6.4 The brakes shall be set and when outriggers are used, they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial work platform on an incline provided, they can be safely installed.

6.5 Aerial work platforms should not be operated at wind speeds greater than 28 mph. The operator must understand and comply with the wind limitations established by the unit manufacturer. Further operating restrictions under reduced wind speeds may be necessary due to the location or activity performed with the unit.

6.6 An aerial work platform shall not be moved when the boom, ladder, or scissors lift is elevated in a working position with personnel in the basket or on the ladder, except for equipment which is specifically designed for this type of operation. Ensure safe clearances are maintained around the work area when operating. Check the clearances for swing radius and boom travel. A second person may be necessary to direct or spot the operator when operating in congested or obstructed areas.

6.7 Aerial ladders must be secured in the lower traveling position by the locking device on top of the truck cab, and the manually operated device at the base of the ladder before the truck is moved for highway travel.

6.8 Always set brakes and extend outriggers, if so equipped, on pads or solid surfaces. Ensure the surface area is suitable and stable to the extent necessary for proper support of the unit.

6.9 Aerial Lifts shall be flagged using caution tape around the work area including but not limited to the Aerial lift body. The purpose is to alert others of the potential travel hazard as well as overhead falling objects.

7.0 TRAINING OBJECTIVES

7.1 SEI Solutions personnel responsible for assigning work for tasks involving the use of an aerial work platform must be able to recognize and assess the hazards associated with working at heights as well as aerial work platform operation. The following training is required:

7.1.1 Aerial lifts/Man-lifts certification training must be completed prior to any employees operating aerial equipment. This training must include both classroom and hands-on equipment training. SEI Solutions Safety Director or competent supervisor authorized in aerial lift operations may conduct this training.

7.1.2 Aerial Platform Lift Operation Awareness CBT module. (Future addition)

7.2 Sub-Contractors who operate aerial work platforms must have equivalent training to SEI Solutions personnel. Documentation verifying contractor competency must be obtained prior to operating the aerial work platform

8.0 REFRESHER TRAINING

8.1 Refresher training is required at least every three years. More frequent refresher training may be necessary in the event of circumstances including, but not limited to, incidents resulting in injury or property damage, changes in the workplace or fall protection systems/equipment that are not sufficiently addressed in the training. The apparent or demonstrated lack of knowledge or skill on the proper use of fall protection equipment also requires refresher training.

In Plant Rail Safety

Administrative Duties

SEI Solutions has developed this program to ensure the safety of our employees while working around in plant Railroad Tracks. Lance Hodge the Safety Manager will ensure this program is implemented and updated.

General

All SEI Solutions employees will follow the host facilities rules and regulations regarding Rail Safety. The following guidelines will be followed at a minimum:

1. Approved hard hats, metatarsal boots, and safety glasses with side shields will be worn at all times.
2. All employees will cross railroad tracks only at existing designated crossings designated by the facility contact.
3. If the designated crossing is blocked and the facility contact grants permission employees may cross at a non-crossing locations under these conditions: A) No crossings can take place within 10 feet of the end of a parked rail car. B) No crossing takes place between uncoupled cars. C) Stop, Look, and Listen prior to proceeding across the tracks. D) Never step on the rails, as they can be slippery.
4. Employees will never attempt to crawl under rail equipment or cross in front of moving equipment.
5. Employees will never position themselves in a pinch point.
6. All employees must obtain permission from the facility contact and the project supervisor prior to working within 6 feet any railroad track.
7. All employees will receive training based on the complexity of the job and the potential hazards related to the project. All training will be documented and employees shall be assessed to ensure their understanding of the training.
8. Retraining shall occur if an employee is observed performing an unsafe act on the job.

Construction Cranes Program

Purpose

Overhead cranes, hoists, and rigging equipment are used by SEI SOLUTIONS LLC employees for lifting and moving materials. In order to maintain a safe workplace for its employees and comply with new regulations, only qualified individuals shall operate these devices. This program outlines the procedures for safe operations and the training requirements regarding overhead cranes, hoists and rigging equipment.

Scope

Applies to all SEI SOLUTIONS LLC employees who operate overhead cranes, hoists, and rigging equipment in the scope of their job duties and assignments. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers SEI SOLUTIONS LLC employees and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Definitions

A/D director (Assembly/Disassembly director) means an individual who meets this subpart's requirements for an A/D director, irrespective of the person's formal job title or whether the person is non-management or management personnel.

Articulating crane means a crane whose boom consists of a series of folding, pin connected structural members, typically manipulated to extend or retract by power from hydraulic cylinders.

Assembly/Disassembly means the assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, "erecting and climbing" replaces the term "assembly," and "dismantling" replaces the term "disassembly." Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.

Assist crane means a crane used to assist in assembling or disassembling a crane.

Attachments means any device that expands the range of tasks that can be done by the equipment. Examples include, but are not limited to: an auger, drill, magnet, pile-driver, and boom-attached personnel platform.

Audible signal means a signal made by a distinct sound or series of sounds. Examples include, but are not limited to, sounds made by a bell, horn, or whistle.

Blocking (also referred to as "cribbing") is wood or other material used to support equipment or a component and distribute loads to the ground. It is typically used to support lattice boom sections during assembly/ disassembly and under outrigger and stabilizer floats.

Boatswain's chair means a single-point adjustable suspension scaffold consisting of a seat or sling (which may be incorporated into a full body harness) designed to support one employee in a sitting position.

Bogie means "travel bogie," which is defined below.

Boom (equipment other than tower crane) means an inclined spar, strut, or other long structural member which supports the upper hoisting tackle on a crane or derrick. Typically, the length and vertical angle of the boom can be varied to achieve increased height or height and reach when lifting loads. Booms can usually be grouped into general categories of hydraulically extendible, cantilevered type, latticed section, cable supported type or articulating type.

Boom (tower cranes): On tower cranes, if the "boom" (i.e., principal horizontal structure) is fixed, it is referred to as a jib; if it is moveable up and down, it is referred to as a boom.

Boom angle indicator means a device which measures the angle of the boom relative to horizontal.

Boom hoist limiting device includes boom hoist disengaging device, boom hoist shutoff, boom hoist disconnect, boom hoist hydraulic relief, boom hoist kick-outs, automatic boom stop device, or derricking limiter. This type of device disengages boom hoist power when the boom reaches a predetermined operating angle. It also sets brakes or closes valves to prevent the boom from lowering after power is disengaged.

Boom length indicator indicates the length of the permanent part of the boom (such as ruled markings on the boom) or, as in some computerized systems, the length of the boom with extensions/attachments.

Boom stop includes boom stops, (belly straps with struts/standoff), telescoping boom stops, attachment boom stops, and backstops. These devices restrict the boom from moving above a certain maximum angle and toppling over backward.

Boom suspension system means a system of pendants, running ropes, sheaves, and other hardware which supports the boom tip and controls the boom angle.

Builder means the builder/constructor of equipment.

Center of gravity: The center of gravity of any object is the point in the object around which its weight is evenly distributed. If you could put a support under that point, you could balance the object on the support.

Certified welder means a welder who meets nationally recognized certification requirements applicable to the task being performed.

Climbing means the process in which a tower crane is raised to a new working height, either by adding additional tower sections to the top of the crane (top climbing), or by a system in which the entire crane is raised inside the structure (inside climbing).

Come-a-long means a mechanical device typically consisting of a chain or cable attached at each end that is used to facilitate movement of materials through leverage.

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

Controlled load lowering means lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.

Controlling entity means an employer that is a prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project – its planning, quality and completion.

Counterweight means a weight used to supplement the weight of equipment in providing stability for lifting loads by counterbalancing those loads.

Crane/derrick includes all equipment covered by this subpart.

Crawler crane means equipment that has a type of base mounting which incorporates a continuous belt of sprocket driven track.

Crossover points means locations on a wire rope which is spooled on a drum where one layer of rope climbs up on and crosses over the previous layer. This takes place at each flange of the drum as the rope is spooled onto the drum, reaches the flange, and begins to wrap back in the opposite direction.

Dedicated channel means a line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or to a coordinated group of cranes/derricks/signal person(s).

Dedicated pile-driver is a machine that is designed to function exclusively as a pile driver. These machines typically have the ability to both hoist the material that will be pile-driven and to pile-drive that material.

Dedicated spotter (power lines): To be considered a dedicated spotter, the requirements of § 1926.1428 (Signal person qualifications) must be met and his/her sole responsibility is to watch the separation between the power line and: the equipment, load line and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.

Directly under the load means a part or all of an employee is directly beneath the load.

Dismantling includes partial dismantling (such as dismantling to shorten a boom or substitute a different component).

Drum rotation indicator means a device on a crane or hoist which indicates in which direction and at what relative speed a particular hoist drum is turning.
Electrical contact occurs when a person, object, or equipment makes contact or comes in close proximity with an energized conductor or equipment that allows the passage of current.

Employer-made equipment means floating cranes/derricks designed and built by an employer for the employer's own use.

Encroachment is where any part of the crane, load line or load (including rigging and lifting accessories) breaches a minimum clearance distance that this subpart requires to be maintained from a power line.

Equipment means equipment covered by this subpart.

Equipment criteria means instructions, recommendations, limitations and specifications.

Fall protection equipment means guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

Fall restraint system means a fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with an anchorage, connectors and other necessary equipment. The other components typically include a lanyard, and may also include a lifeline and other devices.

Fall zone means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.

Flange points are points of contact between rope and drum flange where the rope changes layers.

Floating cranes/derricks means equipment designed by the manufacturer (or employer) for marine use by permanent attachment to a barge, pontoons, vessel or other means of flotation.

For example means "one example, although there are others."

Free fall (of the load line) means that only the brake is used to regulate the descent of the load line (the drive mechanism is not used to drive the load down faster or retard its lowering).

Free surface effect is the uncontrolled transverse movement of liquids in compartments which reduce a vessel's transverse stability.

Hoist means a mechanical device for lifting and lowering loads by winding a line onto or off a drum.

Hoisting is the act of raising, lowering or otherwise moving a load in the air with equipment covered by this standard. As used in this standard, "hoisting" can be done by means other than wire rope/ hoist drum equipment.

Include/including means "including, but not limited to."

Insulating link/device means an insulating device listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.

Jib stop (also referred to as a jib backstop), is the same type of device as a boom stop but is for a fixed or luffing jib.

Land crane/derrick is equipment not originally designed by the manufacturer for marine use by permanent attachment to barges, pontoons, vessels, or other means of floatation.

List means the angle of inclination about the longitudinal axis of a barge, pontoons, vessel or other means of floatation.

Load refers to the object(s) being hoisted and/or the weight of the object(s); both uses refer to the object(s) and the load-attaching equipment, such as, the load block, ropes, slings, shackles, and any other ancillary attachment.

Load moment (or rated capacity) indicator means a system which aids the equipment operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and indicates to the operator the percentage of capacity at which the equipment is working. Lights, bells, or buzzers may be incorporated as a warning of an approaching overload condition.

Load moment (or rated capacity) limiter means a system which aids the equipment operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and when the rated capacity is reached, it shuts off power to those equipment functions which can increase the severity of loading on the equipment, e.g., hoisting, telescoping out, or luffing out. Typically, those functions which decrease the severity of loading on the equipment remain operational, e.g., lowering, telescoping in, or luffing in.

Locomotive crane means a crane mounted on a base or car equipped for travel on a railroad track.

Luffing jib limiting device is similar to a boom hoist limiting device, except that it limits the movement of the luffing jib.

Marine hoisted personnel transfer device means a device, such as a "transfer net," that is designed to protect the employees being hoisted during a marine transfer and to facilitate rapid entry into and exit from the device. Such devices do not include boatswain's chairs when hoisted by equipment covered by this standard.

Marine worksite means a construction worksite located in, on or above the water.

Mobile crane means a lifting device incorporating a cable suspended latticed boom or hydraulic telescopic boom designed to be moved between operating locations by transport over the road.

Moving point-to-point means the times during which an employee is in the process of going to or from a work station.

Multi-purpose machine means a machine that is designed to be configured in various ways, at least one of which allows it to hoist (by means of a winch or hook) and horizontally move a suspended load. For example, a machine that can rotate and can be configured with removable forks/tongs (for use as a forklift) or with a winch pack, jib
(with a hook at the end) or jib used in conjunction with a winch. When configured with the forks/tongs, it is not covered by this subpart. When configured with a winch pack, jib (with a hook at the end) or jib used in conjunction with a winch, it is covered by this subpart.

Nationally recognized accrediting agency is an organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations. Examples of such accrediting agencies include, but are not limited to, the National Commission for Certifying Agencies and the American National Standards Institute.

Nonconductive means that, because of the nature and condition of the materials used, and the conditions of use (including environmental conditions and condition of the material), the object in question has the property of not becoming energized (that is, it has high dielectric properties offering a high resistance to the passage of current under the conditions of use).

Operational aids are devices that assist the operator in the safe operation of the crane by providing information or automatically taking control of a crane function. These include, but are not limited to, the devices listed in § 1926.1416 ("listed operational aids").

Operational controls means levers, switches, pedals and other devices for controlling equipment operation.

Operator means a person who is operating the equipment.

Overhead and gantry cranes includes overhead/bridge cranes, semigantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment, irrespective of whether it travels on tracks, wheels, or other means.

Paragraph refers to a paragraph in the same section of this subpart that the word "paragraph" is used, unless otherwise specified.

Pendants includes both wire and bar types. Wire type: a fixed length of wire rope with mechanical fittings at both ends for pinning segments of wire rope together. Bar type: instead of wire rope, a bar is used. Pendants are typically used in a latticed boom crane system to easily change the length of the boom suspension system without completely changing the rope on the drum when the boom length is increased or decreased.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these.

Portal crane is a type of crane consisting of a rotating upperstructure, hoist machinery, and boom mounted on top of a structural gantry which may be fixed in one location or have travel capability. The gantry legs or columns usually have portal openings in between to allow passage of traffic beneath the gantry.

Power lines means electric transmission and distribution lines.

Procedures include, but are not limited to: instructions, diagrams, recommendations, warnings, specifications, protocols and limitations.

Proximity alarm is a device that provides a warning of proximity to a power line and that has been listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.

Qualified evaluator (not a third party) means a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal person.

Qualified evaluator (third party) means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal person.

Qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Qualified rigger is a rigger who meets the criteria for a qualified person.

Range control limit device is a device that can be set by an equipment operator to limit movement of the boom or jib tip to a plane or multiple planes.

Range control warning device is a device that can be set by an equipment operator to warn that the boom or jib tip is at a plane or multiple planes.

Rated capacity means the maximum working load permitted by the manufacturer under specified working conditions. Such working conditions typically include a specific combination of factors such as equipment configuration, radii, boom length, and other parameters of use.

Rated capacity indicator: See load moment indicator.

Rated capacity limiter: See load moment limiter.

Repetitive pickup points refer to, when operating on a short cycle operation, the rope being used on a single layer and being spooled repetitively over a short portion of the drum.

Running wire rope means a wire rope that moves over sheaves or drums.

Runway means a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria.

Section means a section of this subpart, unless otherwise specified.

Sideboom crane means a track-type or wheel-type tractor having a boom mounted on the side of the tractor, used for lifting, lowering or transporting a load suspended on the load hook. The boom or hook can be lifted or lowered in a vertical direction only.

Special hazard warnings means warnings of site-specific hazards (for example, proximity of power lines).

Stability (flotation device) means the tendency of a barge, pontoons, vessel or other means of flotation to return to an upright position after having been inclined by an external force.

Standard Method means the protocol in Appendix A of this subpart for hand signals.

Such as means "such as, but not limited to."

Superstructure: See Upperworks.

Tagline means a rope (usually fiber) attached to a lifted load for purposes of controlling load spinning and pendular motions or used to stabilize a bucket or magnet during material handling operations.

Tender means an individual responsible for monitoring and communicating with a diver.

Tilt up or tilt down operation means raising/lowering a load from the horizontal to vertical or vertical to horizontal.

Tower crane is a type of lifting structure which utilizes a vertical mast or tower to support a working boom (jib) in an elevated position. Loads are suspended from the working boom. While the working boom may be of the fixed type (horizontal or angled) or have luffing capability, it can always rotate to swing loads, either by rotating on the top of the tower (top slewing) or by the rotation of the tower (bottom slewing). The tower base may be fixed in one location or ballasted and moveable between locations. Mobile cranes that are configured with luffing jib and/or tower attachments are not considered tower cranes under this section.

Travel bogie (tower cranes) is an assembly of two or more axles arranged to permit vertical wheel displacement and equalize the loading on the wheels.

Trim means angle of inclination about the transverse axis of a barge, pontoons, vessel or other means of floatation.

Two blocking means a condition in which a component that is uppermost on the hoist line such as the load block, hook block, overhaul ball, or similar component, comes in contact with the boom tip, fixed upper block or similar component. This binds the system and continued application of power can cause failure of the hoist rope or other component.

Unavailable procedures means procedures that are no longer available from the manufacturer, or have never been available, from the manufacturer.

Upperstructure: See Upperworks.

Upperworks means the revolving frame of equipment on which the operating machinery (and many cases the engine) are mounted along with the operator's cab. The counterweight is typically supported on the rear of the upperstructure and the boom or other front end attachment is mounted on the front.

Up to means "up to and including."

Wire rope means a flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.

What is Not Defined as a Crane

- Forklifts, Track Loaders, Excavators (Track Hoe/Backhoe), Concrete Pump Trucks w/boom
- Power Shovels, Digger Derricks, Tow Trucks, Vehicle Mounted Work Platforms
- Self-propelled Elevating Work Platforms, Stacker Cranes, Mechanic's Trucks With Hoisting Devices
- Come-A-Longs and Chain Falls, Gin Poles For Communication Tower Work
- Tree Trimming and tree removal work
- Anchor handling with a vessel or barge using an affixed A-frame

Key Responsibilities

Managers and Supervisors

- Are responsible to ensure that employees and contractors are trained and qualified on the proper operations and have been trained in crane and hoist safety.
- Shall ensure modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer. The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified with respect to the equipment involved and must ensure the original safety factor of the equipment is not reduced.
- Shall ensure all manufacturer procedures applicable to the operational function of equipment must be complied with. All manufacturer procedures applicable to the operational functions of equipment, including its use with attachments, must be complied with.
- Are responsible to see that all provisions of this program are followed and that crane inspections are performed and the equipment is in safe operating condition.
- Are responsible for identifying hazard areas by marking the boundaries of the crane swing radius with warning lines, railings or similar barriers or other safety measures to be used when the equipment has the potential to strike and injure an employee or pinch/crush an employee against any other object.

Employees

- Employee operators are responsible to follow the requirements of this program and report any damage or needed repairs immediately to their supervisor.
- Operators must meet the physical qualifications, pass a physical, a written examination, understand and be able to use a load chart as well as calculate loads for the crane type operated.
- Employees designated as crane operators are responsible for the entire lift. In addition, crane operators are responsible to:
    - Make the required inspections,
    - Ensure that the crane is maintained,
    - Ensure that all personnel working in the area around the crane are kept clear of all hazards related to crane operations.
    - Determine the weights, and correct rigging required for loads to be lifted.

Crane Operator Certification/Qualification

Operators must be determined to be qualified before they are permitted to operate any crane. Only those employees qualified by training or experience shall be allowed to operate equipment and machinery.

Within 4 years of November 8th 2010 SEI SOLUTIONS LLC must ensure operators must be qualified/certified by one of the following methods:

Certification by an Accredited Crane Operator Testing Organization

- Accredited by a nationally recognized accrediting agency
- Certification is portable
- Valid for five years
- Program must be reviewed by a nationally recognized accrediting agency every three years

Qualification by an Audited Employer Program

- Developed or approved by an auditor certified by an accredited crane operator testing organization
- Auditor is not an employee of SEI SOLUTIONS LLC
- Tests should be administered per nationally recognized test administration standards
- Program shall be audited within the first three months, then once every three years
- Qualification is not portable and valid for five years

Qualification by the U.S. Military

Licensing by a Government Entity

- Must meet or exceed requirements of the OSHA standard
- Valid only within the jurisdiction of the government entity
- Valid for time specified by the government entity, but no longer than five years

Certification/Qualification Criteria

Pass written test that include:

- Controls and operational performance
- Ability to calculate the load/capacity
- Procedures for power line contact
- Site preparation
- Ability to read manuals/charts relevant to the equipment being operated

Pass practical examination

Ability to perform a pre-shift inspection

Operational and maneuvering skills

Application of load chart information

Application of safe shut down and securing procedures

Administrative Criteria

- SEI SOLUTIONS LLC must revoke operator's certification if they have reason to believe the employee is not qualified to operate.
- The current training records must be on file during the operator's employment.

Rigger Qualifications

Riggers assemble, rig, hook and unhook, guide, and disassemble crane equipment and materials. Riggers must meet the requirements of a qualified person. A qualified rigger is a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to resolve problems relating to the subject matter, the work, or the project.

Riggers must be trained in all the requirements of the regulations that apply to their respective roles. For example, riggers must be trained and qualified to perform assembly and disassembly operations when their job tasks require them to perform such operations.

Signal Person Qualification

All signal persons must be qualified to give signals. In order to be qualified, the signal person must:

- Know and understand the type of signals used; if hand signals are used, the signal person must know and understand the Standard Method for hand signals.
- Be competent in the application of the type of signals used.
- Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
- Know and understand the regulatory requirements for signals (29 CFR 1926.1419 to 1926.1422) and the signal person qualifications (29 CFR 1926.1428).
- Demonstrate that he or she meets the qualification requirements for signalers through an oral or written test and through a practical test.

Signal Person Evaluations

The qualification of signal persons must be evaluated and documented by either:

- A third party qualified evaluator, *or*
- The employer's qualified evaluator (i.e., an employee competent in accurately assessing whether the signaler has met the qualification requirements)

Signal Person Refresher Training

If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirements, SEI SOLUTIONS LLC must not allow the individual to continue working as a signal person until retraining is provided and a reassessment is made that confirms that the individual meets the Qualification Requirements.

Documentation of Signaler Qualification

SEI SOLUTIONS LLC must make the documentation for whichever option is used available at the site while the signal person is employed by SEI SOLUTIONS LLC. The documentation must specify each type of signaling (e.g. hand signals, radio signals) for which the signal person meets the requirements of the rule.

Authority to Stop Operations

The operator has the authority to stop and refuse to handle loads whenever there is a safety concern. Whenever there is a safety concern, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

Ground Conditions

Cranes must not be used unless ground conditions are able to support the equipment and any supporting materials per the manufacturer's specifications. SEI SOLUTIONS LLC (controlling entity) will ensure that equipment must not be assembled or used unless ground conditions are firm, drained and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.

SEI SOLUTIONS LLC will locate all hazards that are identified in all available documents and inform the crane user of them.

Overhead Power Lines and Power Line Safety in Crane Operations

- No part of crane, line or load may be able to reach within 20 feet of a power line during setup. Exceptions: de-energized and grounded power lines or use of a dedicated spotter or proximity alarms.
- Assembly/disassembly below power lines is prohibited, unless line is de-energized and grounded.
- All power lines are presumed to be energized unless confirmed to be de-energized by the utility owner/operator and visibly grounded at the worksite.
- All power lines presumed to be un-insulated.
- Employees shall understand limitations of insulating links, proximity alarms and range control devices, if used.
- Dedicated spotters shall be trained.
- There must be at least one electrocution hazard warning sticker conspicuously placed in the cab of the crane.

Power Lines Safety

A pre-operation hazard assessment will be performed to identify the work zone and determine if any part of the equipment could reach closer than 20 feet to a power line. The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.

Measures must be taken if it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line. If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:

- Ensure the power lines have been deenergized and visibly grounded
- Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line
- Determine the line's voltage and minimum approach distance permitted in Table A (below).

Voltage (kV)	Minimum Clearance Distance(feet)
Up to 50	10
50 to 200	15
200 to 350	20
350 to 500	25
500 to 750	35
750 to 1000	45
Over 1000	As established by the line owner

Some special requirements for working below power lines include training of operators and crew on:

- Procedures to follow after power line contact
- Danger of a potential energized zone
- Operator’s emergency procedures
- Safest means to evacuate equipment
- Need for employees to avoid approach
- Safe clearance from power lines

Required Equipment

Mandatory Safety Devices Equipment

All safety devices must be in proper working order before operation begins. Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. The following is mandatory equipment:

- Crane level indicator
- Boom stops
- Jib stops
- Locks for foot pedal brakes
- Horns
- Integral check valves for hydraulic outriggers
- Rail clamps and stops for equipment on rails

The following required equipment must be in service except where specified temporary alternative measures are met:

- Boom hoist limiting device
- Luffing jib limiting device
- Anti two-block device (cranes manufactured after 2/28/92) Exception: lattice booms used for dragline, clam shell, scrap magnet, drop ball, marine operations and pile driving work
- Boom angle or radius indicator
- Jib angle indicator (luffing jibs)
- Boom length indicator (telescopic booms)
- Load weighing devices (load moment indicators, rated capacity indicators or rated capacity limiters –cranes manufactured after 3/29/03
- Outrigger position indicators (cranes manufactured after 1/1/08)
- Hoist drum rotation indicator (if drum is not visible to operator)

An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.

Procedures applicable to the operation of the equipment must be readily available in the cab at all times. The operator shall have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator's manual.

If the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground floor.

Whenever internal combustion engine powered equipment exhausts in enclosed spaces, test shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

Material Hoists, Personnel Hoists and Elevators

General Requirements

Hoist Specifications

All material hoists must conform to the requirements of ANSI/ASME A10.5-1969, Safety Requirements for Material Hoists. Note: ANSI/ASME have updated this standard; however, OSHA allows SEI SOLUTIONS LLC to follow the updated consensus standard without penalty when it provides equal or greater employee protection.

SEI SOLUTIONS LLC must comply with the manufacturer's specifications and limitations for the operation of all hoists and elevators. Where manufacturer's specifications are not available, a professional engineer competent in the field must determine the limitations assigned to the equipment.

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions must be posted on cars and platforms.

Wire Rope

Hoisting ropes must be installed in accordance with the wire rope manufacturer's recommendations. Wire rope must be removed from service when any of the following conditions exists:

- In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay
- Abrasion, scrubbing, flattening, or peening, causing loss of more than one-third of the original diameter of the outside wires
- Evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires
- Reduction from nominal diameter of more than three sixty-fourths in. for diameters up to and including three-fourths in.; one-sixteenth in. for diameters seven-eighths to 11/8.in.; and three thirty-seconds in. for diameters one and one-quarter in. to one and one-half.in.

Prohibited Operations

The installation of live booms on hoists and the use of endless belt-type man lifts are prohibited.

The manufacturer's instructions, procedures and prohibitions must be followed and complied with when assembling and/or disassembling equipment.

Material Hoists

Operating rules must be established and posted at the operator's station of the hoist. Such rules must include signal system and allowable line speed for various loads. Rules and notices must be posted on the car frame or crosshead in a conspicuous location, including the statement "No Riders Allowed." No person must be allowed to ride on material hoists except for the purposes of inspection and maintenance.

Protective Gates, Bars, and Coverings

All entrances of the hoistways must be protected by substantial gates or bars, which must guard the full width of the landing entrance. All hoistway entrance bars and gates must be painted with diagonal contrasting colors, such as black and yellow stripes.

Bars must be not less than 2- by 4-in. wooden bars or the equivalent, located 2 ft. from the hoistway line. Bars must be located neither less than 36 in. nor more than 42 in. above the floor. Gates or bars protecting the entrances to hoistways must be equipped with a latching device.

Overhead protective covering of 2-in. planking, 3/4-inch plywood, or other solid material of equivalent strength must be provided on the top of every material hoist cage or platform.

The operator's station of a hoisting machine must be provided with overhead protection equivalent to tight planking not less than 2 in. thick. The support for the overhead protection must be of equal strength.

Hoist Towers

All material hoist towers must be designed by a licensed professional engineer. Hoist towers may be used with or without an enclosure on all sides. Whichever alternative is chosen, the following applicable conditions must be met:

- When a hoist tower is enclosed, it must be enclosed on all sides for its entire height with a screen enclosure of 1/2-in. mesh, No. 18 U.S. gauge wire or equivalent, except for landing access.
- When a hoist tower is not enclosed, the hoist platform or car must be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 1/2-in. mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure must include the required gates for loading and unloading. A 6-ft-high enclosure must be provided on the unused sides of the hoist tower at ground level.

Car-arresting devices must be installed to function in case of rope failure.

Personnel Hoists

Specifications

All personnel hoists used by employees must be constructed of materials and components that meet the specifications for materials, construction, safety devices, assembly, and structural integrity as stated in the ANSI/ASME A10.4-1963, Safety Requirements for Workmen's Hoists. ANSI/ASME have updated this standard; however, OSHA allows SEI SOLUTIONS LLC to follow the updated consensus standard without penalty when it provides equal or greater employee protection.

Hoist Towers

Hoist towers outside the structure must be enclosed for the full height on the side or sides used for entrance and exit to the structure. At the lowest landing, the enclosure on the sides not used for exit or entrance to the structure must be enclosed to a height of at least 10 ft. Other sides of the tower adjacent to floors or scaffold platforms must be enclosed to a height of 10 ft. above the level of such floors or scaffolds. Towers inside of structures must be enclosed on all four sides throughout the full height. Towers must be anchored to the structure at intervals not exceeding 25 ft. In addition to tie-ins, a series of guys must be installed. Where tie-ins are not practical, the tower must be anchored by means of guys made of wire rope at least one-half in. in diameter, securely fastened to anchorage to ensure stability.

Hoistway Doors and Gates

Hoistway doors or gates must be not less than 6 ft. 6 in. high and must be provided with mechanical locks that cannot be operated from the landing side, and must be accessible only to persons on the car. A door or gate must be provided at each entrance to the car, which must protect the full width and height of the car entrance. Doors or gates must be provided with electrical contacts that do not allow movement of the hoist when door or gate is open.

Cars

Cars must be permanently enclosed on all sides and the top, except sides used for entrance and exit that have car gates or doors. Safeties must be capable of stopping and holding the car and rated load when traveling at governor tripping speed. Cars must be provided with a capacity and data plate secured in a conspicuous place on the car or crosshead. An emergency stop switch must be provided in the car and marked "Stop."

Covering
Overhead protective covering of 2-in. planking, 3/4-in. plywood, or other solid material or equivalent strength must be provided on the top of every personnel hoist.

Engine Prohibition
Internal combustion engines must not be permitted for direct drive.

Stopping Device
Normal and final terminal stopping devices must be provided.

Ropes
The minimum number of hoisting ropes used must be three for traction hoists and two for drum-type hoists. The minimum diameter of hoisting and counterweight wire ropes must be1/2 in. Following are the minimum safety factors for suspension wire ropes:

Rope speed (feet per minute)	Minimum factor of safety
50	7.60
75	7.75
100	7.95
125	8.10
150	8.25
600	10.70

See the chart at 29 CFR 1926.552(c)(14) for additional safety factors.

Personnel Hoists Used in Bridge Tower Construction
Such hoists must be approved by a registered professional engineer and erected under the supervision of a qualified engineer competent in this field.

When a hoist tower is not enclosed, the hoist platform or car must be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 3/4-in. mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure must include the required gates for loading and unloading.

These hoists must be inspected and maintained on a weekly basis. Whenever the hoisting equipment is exposed to winds exceeding 35 miles per hour, it must be inspected and put in operable condition before reuse.

Wire rope must be taken out of service when any of the following conditions exist:

- In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay
- Wear of one-third the original diameter of outside individual wires
- Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure
- Evidence of any heat damage from any cause
- Reductions from nominal diameter of more than three sixty-fourths in. for diameters to and including three-fourths in., one-sixteenth in. for diameters seven-eights in. to 11/8 in. inclusive, three thirty-seconds in. for diameters 11/4 to 11/2 in. inclusive
- In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

Elevators
Permanent elevators under the care and custody of SEI SOLUTIONS LLC and used by employees for work covered by this Act must comply with the requirements of ANSI/ASME A17.1-1965 with addenda A17.1a-1967, A17.1b-1968, A17.1c-1969, A17.1d-1970, and inspected in accordance with A17.2-1960 with addenda A17.2a-1965 and A17.2b-1967. ANSI/ASME have updated these standards;

however, OSHA allows SEI SOLUTIONS LLC to follow the updated consensus standards without penalty when they provide equal or greater employee protection.

Base-Mounted Dum Hoists

Specifications

All base-mounted drum hoists in use must meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operations, as prescribed by the manufacturer.

SEI SOLUTIONS LLC must ensure that exposed moving parts such as gears, projecting screws, setscrews, chain, cables, chain sprockets, and reciprocating or rotating parts that constitute a hazard are guarded.

All controls used during the normal operation cycle must be located within easy reach of the operator's station.

Electric Motor-Operated Hoists

Electric motor-operated hoists must be provided with:

- A device to disconnect all motors from the line upon power failure and not permit any motor to be restarted until the controller handle is brought to the "off" position
- Where applicable, an over-speed preventive device
- A means whereby remotely operated hoists stop when any control is ineffective

Overhead Hoists

All overhead hoists in use must meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed by the manufacturer.

The safe working load of the overhead hoist, as determined by the manufacturer, must be indicated on the hoist, and this safe working load must not be exceeded.

The supporting structure to which the hoist is attached must have a safe working load equal to that of the hoist. The support must be arranged so as to provide for free movement of the hoist and must not restrict the hoist from lining itself up with the load.

The hoist must be installed only in locations that will permit the operator to stand clear of the load at all times.

Air hoists must be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air must be positively connected to prevent disconnected during use.

Conveyors

Specifications

All conveyors in use must meet the applicable requirements for design, construction, inspection, testing, maintenance, and operation, as prescribed in the ANSI/ASME B20.1-1957, Safety Code for Conveyors, Cableways, and Related Equipment. ANSI/ASME have updated this standard; however, OSHA allows SEI SOLUTIONS LLC to follow updated consensus standards without penalty when they provide equal or greater employee protection.

Means for stopping the motor or engine must be provided at the operator's station. Conveyor systems must be equipped with an audible warning signal to be sounded immediately before starting up the conveyor. If the operator's station is at a remote point, similar provisions for stopping the motor or engine must be provided at the motor or engine location.

Emergency stop switches must be arranged so that the conveyor cannot be started again until the actuating stop switch has been reset to running or "on" position.

Guards

Screw conveyors must be guarded to prevent employee contact with turning flights. Where a conveyor passes over work areas, aisles, or thoroughfares, suitable guards must be provided to protect employees required to work below the conveyors.

Marking and Lockout/Tagout

All crossovers, aisles, and passageways must be conspicuously marked by suitable signs (see 29 CFR 1926.200). Conveyors must be locked out, or otherwise rendered inoperable, and tagged out with a "Do Not Operate" tag during repairs and when operation is hazardous to employees performing maintenance work.

Rigging Practices

Major incidents involving rigging operations are caused by:

- the failure of equipment from overloading, incorrect assembly or disassembly, or lack of proper maintenance;
- dropped or falling loads, usually as a result of the misuse or malfunction of hoisting lines and rigging; and
- lack of safeguards, especially in proximity to high-voltage lines. Training is key in minimizing the risk of incidents

An important element of the SEI SOLUTIONS LLC material handling program is proper rigging practices. Rigging of loads must be done with relative precision and performed by trained, experienced personnel. To ensure that safe practices are followed, a competent and qualified person must direct the assembly/disassembly of equipment. The assembly/disassembly of equipment must be directed by a competent and qualified person to see that:

- Rigging equipment that has the necessary capacity to do the job is available.
- Rigging equipment is in a safe working condition.
- Loads are rigged correctly.
- Safety of the rigging crew and other potentially exposed personnel is maintained.

Rigging and Sling Inspections and Safety Requirements

- Only select rigging equipment that is in good condition.
- All rigging equipment shall be inspected annually; defective equipment is to be removed from service and destroyed to prevent inadvertent reuse.
- The load capacity limits shall be stamped or affixed to all rigging components.
- All devices shall be visually inspected prior to use and removed from service for any of the following conditions:
    - Nylon slings with:
        - Abnormal wear.
        - Torn stitching.
        - Broken or cut fibers.
        - Discoloration or deterioration.
    - Wire rope slings (see Wire Rope Inspection) with:
        - Kinking, crushing, bird caging, or other distortions.
        - Evidence of heat damage.
        - Cracks, deformation, or worn end attachments.
        - Six randomly broken wires in a single rope lay.
        - Three broken wires in one strand of rope.
        - Hooks opened more than 15% at the throat.
        - Hooks twisted sideways more than 10 degrees from the plane of the unbent hook.
    - Alloy steel chain slings with:
        - Cracked, bent, or elongated links or components.
        - Cracked hooks.
        - Shackles, eye bolts, turnbuckles, or other components that are damaged or deformed.

Rigging a Load

- Determine the weight of the load - do not guess.
- Determine the proper size for slings and components.
- Do not use manila rope for rigging.
- Ensure that shackle pins and shouldered eyebolts are installed in accordance with the manufacturer's recommendations.
- Ensure that ordinary (shoulderless) eyebolts are threaded in at least 1.5 times the bolt diameter.
- Use safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible.
- Pad sharp edges to protect slings.
- Remember that machinery foundations or angle-iron edges may not feel sharp to the touch but could cut into rigging when under several tons of load.
- Wood, tire rubber, or other pliable materials may be suitable for padding.
- Do not use slings, eyebolts, shackles, or hooks that have been cut, welded, or brazed.

- Install wire-rope clips with the base only on the live end and the U-bolt only on the dead end.
- Follow the manufacturer's recommendations for the spacing for each specific wire size.
- Determine the center of gravity and balance the load before moving it.
- Initially lift the load only a few inches to test the rigging and balance.

Inspections

Inspection records and preventative maintenance records are maintained. This includes pre-erection inspections and assessment of ground conditions.

Following assembly and erection of hoists, and before being put in service, an inspection and test of all functions and safety devices must be made under the supervision of a competent person.

A similar inspection and test are required following major alteration of an existing installation.

All hoists must be inspected and tested at not more than 3-month intervals. SEI SOLUTIONS LLC must prepare a certification record, which includes the date the inspection and test of all functions and safety devices was performed; the signature of the person who performed the inspection and test; and a serial number, or other identifier, for the hoist that was inspected and tested. The most recent certification record must be maintained on file.

Cranes shall be inspected on the following schedule:

- After Modification
- After Repair Or Adjustment
- Post Assembly
- Each Shift
- Monthly
- Annual Comprehensive

Additional inspections will occur for the following situations:

Severe Service

- Shock load, corrosive atmosphere, etc.
- Inspect exposed items/conditions
- Document

Not In Regular Use

- Idle more than three months
- Monthly inspection must be performed
- Document

Cranes and hoists that have been overloaded shall be inspected prior to being returned to service. The inspection and testing requirements are included.

Initial inspection and test shall be performed by a qualified third party.

- Prior to initial use all new and altered cranes shall be inspected and tested to ensure compliance with the provisions of 29 CFR1910.179 and ABSI B30.2.
- Only after determining, by this inspection, testing and proper documentation, that the crane is in safe operating condition, shall it be put into service.

SEI SOLUTIONS LLC shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use. Daily pre-use inspections shall be performed by the crane operator (designated as SEI SOLUTIONS LLC's designated competent person) prior to beginning shift and through observation during normal operation. Daily inspections shall include:

- Any deficiencies shall be repaired, or defective parts replaced, before continued use.
- All functional operating mechanisms for maladjustment interfering with proper operation.
- Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems.
- Hooks, if deformations or cracks are found the hook shall be tagged out of service until repaired and tested by qualified personnel.
- Hoist chains, including end connections, for excessive wear, twist, distorted links interfering with proper function, or stretch beyond manufacturer's recommendations.

Severe Service Inspection

Severe service inspections shall be conducted to inspect exposed items and conditions resulting from a shock load, corrosive atmosphere, etc. Inspections shall be documented.

Not in Regular Use Inspection

If equipment is idle for more than three months a monthly inspection shall be performed before being placed in service. The same criteria for monthly inspections shall be followed.

Monthly Inspection

Monthly inspections of equipment by a competent person are documented. Equipment must be inspected monthly by a competent person and documented. Documentation must include the following:

- Items checked,
- Results of inspection, and
- Name and signature of the inspector.

Documentation must be retained for 3 months. Documented monthly inspection not required if the daily inspection is documented and records are retained for 3 months.

If safety hazards are found during inspections, the equipment in question shall be tagged out and not used until repairs are made. Any deficiencies constituting a safety hazard shall cause the equipment to be tagged out of service until repairs are made.

Annual Inspection

A thorough, annual inspection and functioning testing of the hoisting machinery shall be documented made by a qualified person, or by a government or private agency recognized by the U.S. Department of Labor using the detail inspection criteria per regulation. SEI SOLUTIONS LLC shall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment and kept on file for 12 months or until the next annual inspection.

Wire Rope Inspection

Wire rope will be inspected on the following schedule:

- Shift Inspection – Before each shift.
- Monthly Inspection - All wire ropes, including running ropes and the inspection shall be documented.
- Annual Inspection – At least every 12 months, unless not feasible due to set up. This will be a more detailed inspection including wire rope that is normally hidden during daily or monthly inspections and the inspection shall be documented.

A SEI SOLUTIONS LLC competent person will conduct visual inspections before each shift, monthly and annually for wire rope and categorize deficiencies in:

<u>Category I Deficiencies</u>

- Significant distortion of the wire rope structure such as kinking, crushing, un-stranding, bird caging, signs of core failure, or steel core protrusion between the outer strands.
- Significant corrosion.
- Electric arc (from a source other than power lines) or heat damage.
- Improperly applied end connections.
- Significantly corroded, cracked, bent, or worn end connections (such as from severe service).

If a Category I deficiency is identified, an immediate determination shall be made by the qualified person as to replacement of the wire rope, or if the deficiency is localized, the wire rope may be severed at the bad spot and may be continued to be used.

Category II Deficiencies

Visible broken wires as follows:

- In running wire ropes: six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
- In rotation resistant ropes: two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.
- In pendants or standing wire rope more than two broken wires in one rope lay located in rope beyond end connections and / or one or more broken wire in a rope lay located at an end connection.

If a category II deficiency is identified an immediate determination shall be made by the qualified person as to, based on manufacturer recommendations, either remove or monitor the wire rope for continued deterioration.

The qualified person determines when to replace the wire rope (no more than 30 days after the deficiency is identified).

A qualified person assesses the deficiency in light of the load and other conditions of use and determines it is safe for continued use.

A qualified person establishes the parameters of use.

All workers who conduct shift inspections are notified.

The qualified person's findings and procedures are documented.

Category III Deficiencies

- Electrical contact to power line
- Core protrusion or other distortion indicating core failure in rotation resistant wire rope
- Broken strand

If a category III deficiency is identified, operations involving use of the wire rope shall be prohibited until the:

- Wire rope is replaced (ALWAYS with power line contact).
- Deficiency is localized and problem corrected.

Operational Procedures

Only qualified personnel shall operate cranes and equipment covered by this program. Operators shall comply with the following safety rules while operating cranes and hoists:

- Employees shall not be exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres when internal combustion engine powered equipment is used. Tests shall be conducted and documented.
- Do not engage in any practice that will divert your attention while operating the crane.
- Respond to signals only from the person who is directing the lift or any appointed signal person.
- Obey a stop signal at all times, no matter who gives it.
- Do not move a load over people.
- People shall not be placed in jeopardy by being under a suspended load.
- Do not work under a suspended load unless the load is supported by blocks, jacks, or a solid footing that will safely support the entire weight.
- Have a crane or hoist operator remain at the controls or lock open and tag the main electrical disconnect switch.
- Ensure that the rated load capacity of a crane's bridge, individual hoist, or any sling or fitting is not exceeded.
- Know the weight of the object being lifted.
- Check that all controls are in the OFF position before closing the main line disconnect switch.
- If spring-loaded reels are provided to lift pendants clear off the work area, ease the pendant up into the stop to prevent damaging the wire.
- Avoid side pulls. These can cause the hoist rope to slip out of the drum groove, damaging the rope or destabilizing the crane or hoist.
- To prevent shock loading, avoid sudden stops or starts. Shock loading can occur when a suspended load is accelerated or decelerated, and can overload the crane or hoist. When completing an upward or downward motion, ease the load slowly to a stop.

A visual inspection of the equipment will be conducted by a competent person prior to each shift. A competent person must conduct a visual inspection of equipment prior to each shift. The inspection must consist of observation for apparent deficiencies. Some of the inspection items include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions. The designated competent person operator shall do the following steps before making lifts with any crane or hoist:

- Test the upper-limit switch and slowly raise the unloaded hook block until the limit switch trips.
- Visually inspect the hook, load lines, trolley, and bridge as much as possible from the operator's station; in most instances, this will be the floor of the building.
- If provided, test the lower-limit switch.
- Test all direction and speed controls for both bridge and trolley travel.
- Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches
- Test the pendant emergency stop.
- Test the hoist brake to verify there is no drift without a load.
- If provided, test the bridge movement alarm.
- Lock out and tag for repair any crane or hoist that fails any of the above tests.
- Any deficiencies shall be repaired, or defective parts replaced, before continued use.

Moving a Load

- Center the hook over the load to keep the cables from slipping out of the drum grooves and overlapping, and to prevent the load from swinging when it is lifted.
- Inspect the drum to verify that the cable is in the grooves.
- Use a tag line when loads must traverse long distances or must otherwise be controlled.
- Manila rope may be used for tag lines.
- Plan and check the travel path to avoid personnel and obstructions.
- Lift the load only high enough to clear the tallest obstruction in the travel path.
- Start and stop slowly.
- Land the load when the move is finished.
- Choose a safe landing area.
- Never leave suspended loads unattended
- In an emergency where the crane or hoist has become inoperative, if a load must be left suspended, barricade and post signs in the surrounding area, under the load, and on all four sides.
- Lock open and tag the crane or hoist's main electrical disconnect switch.

Parking a Crane or Hoist

- Remove all slings and accessories from the hook.
- Return the rigging device to the designated storage racks.
- Place the emergency stop switch (or push button) in the OFF position.

Cranes or hoists shall not be loaded beyond their rated capacity for normal operations.

Any crane or hoist suspected of having been overloaded shall be removed from service by locking open and tagging the main disconnect switch. Overloaded cranes shall be inspected, repaired, load tested, and approved for use before being returned to service.

Fall Protection

Anyone conducting non-assembly/disassembly work, maintenance or repair on cranes or hoists at heights greater than 6 ft (1.8 m) shall use fall protection. Fall protection includes safety harnesses that are fitted with a lifeline and securely attached to a structural member of the crane or building. Anchorages must be any substantial part of the boom or to any substantial piece on the equipment (using correct fall protection equipment). A fall arrest system is permitted to be anchored to the crane/derrick’s hook or other part of the load line where the following requirements are met:

- A qualified person has determined the set-up and rated capacity meets or exceeds the anchorage requirements
- The operator is aware it is being used for this purpose

Exceptions to using fall protection involving non-assembly/disassembly work:

- While at a work station or going to and from a work station.
- When walking point to point along a horizontal lattice boom that has been lowered to the ground and supported.
- In the cab or on the deck

Fall protection must be used when working over 15 feet during the assembly/disassembly process, except when the employee is:

- At or near the draw-works
- In the cab, or on the deck

Signalling

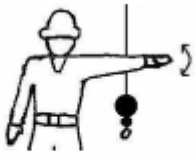
A signal person must be provided if the operator's view is obstructed, if site specific safety concerns require it or if the operator determines that it is necessary. A signal person must be provided for the following situations:

- The point of operation is not in full view of the operator
- The view is obstructed when the equipment is traveling
- The operator or the person handling the load determines it is necessary due to site specific concerns.

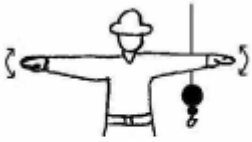
Signals to the operator shall be in accordance with the standard hand signals prescribed by the applicable ANSI standard for the type of crane in use unless voice communications equipment (telephone, radio, or equivalent) is used.

- Signalers must be qualified.
- Signals shall be discernible or audible at all times.
- Some special operations may require addition to or modification of the basic signals.
- For all such cases, these special signals shall be agreed upon and thoroughly understood by both the person giving the signals and the operator, and shall not be in conflict with the standard signals.

STANDARD HAND SIGNALS



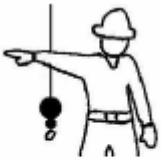
STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.



EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.

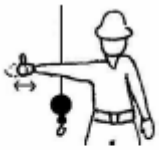
HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.

RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.



SWING – With arm extended horizontally, index finger points in direction that boom is to swing.

RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.

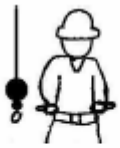


RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.

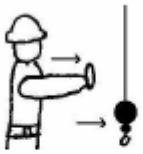
DOG EVERYTHING – Hands held together at waist level.

LOWER – With arm and index finger pointing down, hand and finger make small circles.

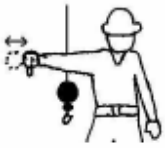
LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.



EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.



TRAVEL/TOWER TRAVEL – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.



LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.

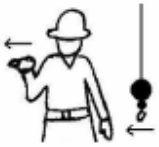
MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.

USE AUXILIARY HOIST (whipline) – With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.

CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.

USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.

CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel.



TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.

Training

Mandatory training is required for:

- Overhead power lines
- Signal persons
- Competent/qualified persons
- Operators
- Crush/pinch points
- Tag-out

Administrative Requirements

Training Costs
SEI SOLUTIONS LLC must provide all training required under the crane and derrick rules at no cost to the employee. SEI SOLUTIONS LLC must pay for certification or qualification of their currently un-certified or unqualified operators.

Refresher Training
SEI SOLUTIONS LLC must provide refresher training in relevant topics for each employee when there is an indication that retraining is necessary on the basis of SEI SOLUTIONS LLC actions or an evaluation of the employee's knowledge.

Training Evaluation
SEI SOLUTIONS LLC must evaluate each employee who has been trained in crane and derrick operations to verify that he or she understands the information provided in training. The rule allows SEI SOLUTIONS LLC to determine the most appropriate method of evaluation.

Note: The crane operator training applies only in states that do not have their own licensing and certification requirements. All other training and qualification requirements apply to all personnel.

Crane Operator Training

SEI SOLUTIONS LLC must comply with federal requirements to train crane operators employed by them. During the certification phase-in period (i.e., November 2010 to November 2014) in states without operator licensing laws, SEI SOLUTIONS LLC must ensure that crane and derrick operators covered by the rules are competent to operate the equipment safely. Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, SEI SOLUTIONS LLC must train that employee before operating the equipment. SEI SOLUTIONS LLC must ensure that each operator is evaluated to confirm that he or she understands the information provided in the training.

Operator-in-training requirement effective November 10, 2014
The rules for operator-in-training (e.g., prequalification/certification training, operator's trainer monitoring, multiple-lift rigging operations) in states without operator licensing rules are applicable on November 10, 2014. Until that date, operators must comply with the minimum training requirements required under the transition period from November 8, 2010 to November 10, 2014.

Minimum Training Requirements

Before operating crane equipment, each crane operator must be trained to know how to safely operate the specific type of equipment he or she will operate, including all of the following:

- Safe practices for testing the boom hoist brake on friction equipment and all other equipment with a boom (see 29 CFR 1926.1430(c)(4)(i) for the specific safe practices);
- The manufacturer's emergency procedures for stopping unintended equipment movement, where available;
- The controls and operational/performance characteristics;
- Use of, and the ability to calculate (manually or with a calculator), load and capacity information on a variety of configurations of the equipment;
- Procedures to prevent and respond to power line contact;
- Technical knowledge similar to the subject matter criteria listed in Appendix C of the regulation applicable to the specific equipment (such as general technical information about wire ropes and rigging devices, site information, operations for carrying loads and multicrane lifts, and use of load charts);
- Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, to site hazards, and to site access;
- The applicable manuals, consensus standards, and other materials incorporated into the regulation.

The operator must be able to read and locate relevant information in the equipment manual and other materials containing information about the safe operation of equipment.

Operator Skills Demonstration

SEI SOLUTIONS LLC must ensure that the operator has demonstrated the skills necessary for safe operation of the equipment, including:

- The ability to recognize, from visual and auditory observation, the items listed in the regulation for shift inspection (29 CFR 1926.1412(d));
- Operational and maneuvering skills;
- Application of load chart information;
- Application of safe shutdown and securing procedures.

Overhead Power Line Training

In cases where crane equipment is expected to come closer to live power lines than the minimum clearance distance permitted under the rules for power line safety SEI SOLUTIONS LLC must train each crane operator and crew member assigned to work with equipment the procedures to be followed in the event of electrical contact with a power line. Such training must include:

- Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground.
- The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab.
- The safest means of evacuating from equipment that may be energized.
- The danger of the potentially energized zone around the equipment (step potential).
- The need for crew in the area to avoid approaching or touching the equipment and the load.
- Safe clearance distance from power lines.
- Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.
- Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated.
- The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.
- The procedures to be followed to properly ground equipment and the limitations of grounding.

Employees working as dedicated spotters must be trained to enable them to effectively perform their task, including training on the applicable requirements of this section.

Tag Out and Start-up Procedures Training

Each operator must be trained in the tagout and start-up procedures specified in the rule for crane and derrick equipment that is out of service (see Operation rule at 29 CFR 1926.1417(f) and (g)).

Operators of Derricks, Sideboom Cranes and equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 lb. or less

Such operators are exempt from the detailed training requirements for other cranes. However, before operating such equipment, they must be trained in the safe operation of the type of equipment they will be operating.

ASSEMBLY/DISASSEMBLY (A/D) DIRECTOR

The A/D director is a person who supervises equipment assembly and disassembly operations and must understand the applicable A/D procedures.

The A/D director must meet the criteria for a competent and qualified person under the following conditions:

- Where the assembly and disassembly is performed by only one person, that person is considered the A/D director and must meet the training criteria for both a competent person and a qualified person;
- Where the A/D director is assisted by one or more qualified persons, he or she must meet the criteria for a competent person and is not required to be a qualified person.

AUTHORIZED PERSONNEL TRAINING

Each employee assigned to work on or near the equipment (i.e., authorized personnel) must be trained to:

- Recognize swing radius hazards;
- Recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure;
- Keep clear of holes and crush/pinch points.

COMPETENT PERSON TRAINING

The competent person (i.e., one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them) must be trained in any additional requirements of his or her role and responsibility under the new rules. For example, a competent person assigned to conduct a visual inspection of equipment during each shift the equipment is used must be trained in the required elements of a shift inspection.

CREW MEMBER TRAINING

Assembly and Disassembly Operations

Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand:

- Their tasks and the hazards associated with their tasks;
- The hazardous positions and locations that they need to avoid.

Work Near Power Lines and Power Line Safety

Crew members assigned to work with crane and derrick equipment must receive the same overhead power line training as required for crane operators, regardless of the distance from the power lines. See the Crane Operator Training subsection for more information.

DEDICATED SPOTTER

The dedicated spotter must meet the qualifications for a signal person and complete the training requirements for crew member.

The dedicated spotter's sole responsibility is to watch the separation between power lines and the crane or derrick equipment, load line and load (including rigging and lifting accessories) and ensure through communication with the operator that the applicable minimum approach distance is not breached.

MAINTENANCE AND REPAIR EMPLOYEE QUALIFICATIONS AND TRAINING

Maintenance and repair personnel must be trained to operate the equipment under limited conditions necessary to perform the maintenance or repair. The operation is limited to those functions necessary to perform maintenance, inspect the equipment or verify its performance. Such personnel may operate the equipment under the direct supervision of a qualified or certified crane operator, or if they are familiar with the operation, limitations, characteristics, and hazards associated with the type of equipment.

Qualified Person

A maintenance and repair employee must be a qualified person (i.e., a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject matter, the work, or the project). Maintenance and repair workers are not considered "operators" and are therefore not required to be trained in all of the areas required for crane operators.

Tagout and Start-up Procedures Training

Each maintenance and repair person must be trained in tagout and start-up procedures specified in the rule (see Operation rule at 29 CFR 1926.1417(f) and 29 CFR 1926.1417(g)).

QUALIFIED PERSON

Qualified person is an employee by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject matter, the work, or the project. Riggers and signalers are examples of personnel that must meet the requirements for qualified person.

SEI SOLUTIONS LLC must train each qualified person regarding the requirements of the crane and derrick regulations applicable to their respective roles.

FALL PROTECTION TRAINING

SEI SOLUTIONS LLC must train each employee who may be exposed to fall hazards while on or hoisted by crane equipment on all of the fall protection requirements in the rule (29 CFR 1926.1423(a) to 1926.1423(j)), and the applicable criteria and practices in the fall protection rule for construction at 29 CFR 1926.502.

TRAINING RECAP TABLE

Personnel	Activity or Equipment	Training Requirement
All personnel	Work with cranes and derricks	Hazards and procedures to keep clear of holes and crush/pinch points
All personnel	Exposed to fall hazards while on or hoisted by equipment	Fall protection
All personnel on floating cranes/cranes on barges	Floating cranes/derricks and cranes/derricks on barges	Understand hazard warning signs and markings
Assembly/Disassembly (A/D) Director	Supervise assembly and disassembly operations	Meet criteria of a competent person and qualified person
Authorized personnel	Work in areas near rotating crane/derrick superstructure	How to recognize struck-by and pinch/crush hazards
Competent Person	All, including shift and monthly inspections	Applicable to respective role
Crew member	Assembly and disassembly operations	Understand tasks, hazards, positions/ areas to avoid
Crew member	Work near power lines	Power line safety information and procedures
Dedicated Spotter	Work near power lines	Qualify as a signal person
Dedicated Spotter	Work near power lines	Power line safety information and procedures
Maintenance and Repair Personnel	Operate equipment	Qualify to operate
Maintenance and Repair Personnel	Equipment out of service	Tagout and start-up procedures
Operator	Derricks, sidebooms, small hoist/lift capacity cranes (2,000 lbs. or less) only	Know how to safely operate equipment (no specific training requirements)
Operator	Friction equipment	Test the boom hoist brake
Operator	Unintended equipment movement	Know manufacturer's emergency procedures
Operator	Operate specific type of crane (other than derricks, sidebooms, cranes of 2,000 lb or less capacity)	Know how to safely operate, inspect, calculate load, shut down, and secure
Operator	Work near power lines, and within minimum power line clearance	Power line safety and procedures in the event of electrical contact
Operator	Crane/Derrick equipment out of service	Tagout and start-up procedures
Qualified Person	All, including annual inspections	Applicable to respective role; possess a recognized degree, certificate, or professional standing, or have extensive knowledge, training, and experience.
Rigger	Assemble, rig, disassemble equipment and materials	Same as for qualified person
Signal Person	Communicate with operator of crane/derrick with greater than 2,000 lb. lift capacity	Qualify as a signal person with written or verbal test, retrain if needed
Signal Person	Communicate with operator of crane/derrick with lift capacity of 2,000 lb. or less	Proper use of signals applicable to the use of the equipment

CRANES AND DERRICKS IN CONSTRUCTION
PRE-SHIFT INSPECTION BY A COMPETENT PERSON
29 CFR 1926.1412-1413

CRANE: _____ DATE: _____
INSPECTOR: _____

Check the box next to each item after it has passed inspection. Note any deficiencies or other observations that could pose a risk of injury or property damage.

EQUIPMENT TYPE: _____ EQUIPMENT MODEL: _____

MANUFACTURER: _____ SERIAL NUMBER: _____

Circle One		Item or Function Inspected	Notes
Yes	No	Control mechanisms for maladjustments interfering with proper operation	
Yes	No	Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water or other foreign matter	
Yes	No	Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation	
Yes	No	Hydraulic system for proper fluid level	
Yes	No	Hooks and latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat	
Yes	No	Wire rope reeving for compliance with the manufacturer's specifications	
		Wire Rope Category I	
Yes	No	Significant distortion of the wire rope structure such as kinking, crushing, unstranding, birdcaging, signs of core failure or steel core protrusion between the outer strands	
Yes	No	Significant corrosion	
Yes	No	Electric arc damage (from a source other than power lines) or heat damage	
Yes	No	Improperly applied end connections	
Yes	No	Significantly corroded, cracked, bent, or worn end connections (such as from severe service).	
		Wire Rope Category II	
Yes	No	Visible broken wires, as follows:	
Yes	No	In running wire ropes: Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay, where a rope lay is the length along the rope in which one strand makes a complete revolution around the rope.	
Yes	No	In rotation resistant ropes: Two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.	
Yes	No	In pendants or standing wire ropes: More than two broken wires in one rope lay located in rope beyond end connections and/or more than one broken wire in a rope lay located at an end connection	
Yes	No	A diameter reduction of more than 5% from nominal diameter.	
		Wire Rope Category III	
Yes	No	In rotation resistant wire rope, core protrusion or other distortion indicating core failure.	
Yes	No	Prior electrical contact with a power line.	
Yes	No	A broken strand.	
		Wire Rope Critical Review Items	
Yes	No	The competent person must give particular attention to all of the following:	

Circle One		Item or Function Inspected	Notes
Yes	No	Rotation resistant wire rope in use	
Yes	No	Wire rope being used for boom hoists and luffing hoists, particularly at reverse bends.	
Yes	No	Wire rope at flange points, crossover points and repetitive pickup points on drums.	
Yes	No	Wire rope at or near terminal ends.	
Yes	No	Wire rope in contact with saddles, equalizer sheaves or other sheaves where rope travel is limited.	
Yes	No	Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation	
Yes	No	Tires (when in use) for proper inflation and condition	
Yes	No	Ground conditions around the equipment for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions	
Yes	No	The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
Yes	No	Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view.	
Yes	No	Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
Yes	No	Safety devices and operational aids for proper operation	

SIGNATURE OF INSPECTOR _____ DATE _____

Cold Weather Policy

1.0 Purpose

- This section covers SEI Solutions policy related to Cold Stress. The intent of this policy is to provide SEI Solutions employees with general knowledge and guidelines enabling employees to anticipate, recognize, evaluate, and control Cold Stress hazards in the workplace.

2.0 Scope

- This Cold Stress Program is intended for support of, and use by company operations both in business units and project operations.

3.0 Regulatory References

- This Cold Stress Program is primarily intended to satisfy the following regulatory requirements: 29 CFR 1926.20

4.0 Policy

- It is SEI Solutions policy that Supervisors must exercise due diligence for worker safety when assigning work in cold environments by monitoring and taking the following into account:
    - Air temperature
    - Wind chill factor
      of work effort (light, moderate or heavy)
      conditions (dry or wet)
- Wind Chill may be determined from local radio reports or by measuring the air temperature with a thermometer and estimating wind speed as follows:

    - 5mph –light flag just moves
    - 10mph –light flag is fully extended by the wind
    - 15 mph –raises a newspaper sheet above the ground

- 20mph –capable of blowing snow

5.0 Responsibilities

5.1 Management

5.1.1 Identify and conduct an assessment of tasks and occupations where there is the potential for cold stress.

5.1.2 Implement and/or provide controls (engineering, administrative or personal protective equipment) to minimize cold stress.

5.1.3 Provide training and education regarding cold stress, including early signs and symptoms of cold-related exposure

5.2 Supervision

5.2.1 Monitor weather conditions and plan work to minimize the exposure of employees to conditions that could cause cold stress.

5.2.2 Ensure that employees are equipped with and wear protective outerwear when necessary.

5.2.3 Implement a "Buddy System" to ensure that no employee is working alone in cold work environments.

5.2.4 Upon observing, or being notified of, an employee experiencing the initial symptoms of frostbite or hypothermia, the supervisor is to ensure that the employee is moved to a warm location and administer first aid. If symptoms worsen or additional symptoms appear, the

supervisor should ensure that the employee is examined by a medical professional.

5.2.5 The supervisor must complete an Accident/Incident Report upon notification of potential frostbite or hypothermia.

5.3 Employees

5.3.1 Adhere to all control measures or work procedures that have been designed and implemented to reduce exposure to conditions that could cause cold stress

5.3.2 Leave cold environments if signs or symptoms of cold related stress appear

5.3.3 Wear all required cold temperature clothing and PPE

5.3.4 Immediately report any signs or symptoms of cold-related Stress

6.0 Hazard Recognition & Control

6.1 Hazard Recognition

When the body is unable to warm itself, cold related stress may result. This may include tissue damage and possibly death. Four factors contribute to cold stress: cold air temperatures, high velocity air movement, dampness of the air, and contact with cold water or surfaces. A cold environment forces the body to work harder to maintain its temperature. Cold air, water, and snow all draw heat from the body. Wind chill is the combination of air temperature and wind speed. For example, when the air temperature is 40°F, and the wind speed is 35 mph, your exposed skin receives conditions equivalent to the air temperature being 11° F. While it is obvious that below freezing conditions combined with inadequate clothing could bring about cold stress, it is also important to understand that it can

also be brought about by temperatures in the 50's coupled with some rain and wind. When in a cold environment, most of your body's energy is used to keep your internal temperature warm. Over time, your body will begin to shift blood flow from your extremities (hands, feet, arms, and legs) and outer skin to the core (chest and abdomen). This allows exposed skin and the extremities to cool rapidly and increases the risk of frostbite and hypothermia. Combine this with cold water, and trench foot may also be a problem.

6.1.1 **Hypothermia** which means "low heat", is a potentially serious health condition. This occurs when body heat is lost faster than it can be replaced. When the core body temperature drops below the normal 98.6° F to around 95° F, the onset of symptoms normally begins. The person may begin to shiver and stomp their feet in order to generate heat. Workers may lose coordination, have slurred speech, and fumble with items in the hand. The skin will likely be pale and cold. As the body temperature continues to fall these symptoms will worsen and shivering will stop. Workers may be unable to walk or stand. Once the body temperature falls to around 85° F severe hypothermia will develop and the person may become unconscious, and at 78°, the person could die.

Anyone working in a cold environment may be at risk for cold stress. However, older people may be at more risk than younger adults, since older people are not able to generate heat as quickly. Certain medications may prevent the body from generating heat normally. These include anti-depressants, sedatives, tranquilizers and others.

Treatment depends on the severity of the hypothermia. For cases of mild hypothermia move to warm area and stay active. Remove wet clothes and replace with dry clothes or blankets, cover the head. To promote metabolism and assist in raising internal core temperature drink a warm (not hot) sugary drink. Avoid drinks with caffeine. For more severe cases do all the above, plus contact emergency medical personnel (Call 911 for

an ambulance), cover all extremities completely, place very warm objects, such as hot packs or water bottles on the victim's head, neck, chest and groin. Arms and legs should be warmed last. In cases of **severe hypothermia** treat the worker very gently and do not apply external heat to re-warm. Hospital treatment is required.

If worker is in the water and unable to exit, secure collars, belts, hoods, etc. in an attempt to maintain warmer water against the body. Move all extremities as close to the torso as possible to conserve body heat.

6.1.2 *Frostbite* occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the temperatures are 30° F or lower, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch. There may be blisters in severe cases. Do not rub the area to warm it. Wrap the area in a soft cloth, move the worker to a warm area, and contact medical personnel. Do not leave the worker alone. If help is delayed, immerse in warm (maximum 105 °F), not hot, water. Do not pour water on affected part. If there is a chance that the affected part will get cold again do not warm. Warming and re-cooling will cause severe tissue damage.

6.1.3 *Trench Foot* or immersion foot is caused by having feet immersed in cold water at temperatures above freezing for long periods of time. It is similar to frostbite, but considered less severe. Symptoms usually consist of tingling, itching or burning sensation. Blisters may be present. Soak feet in warm water, then wrap with dry cloth bandages.

Drink a warm, sugary drink.

6.2 Hazard Controls

6.2.1 Engineering Controls –Engineering controls can be effective in reducing the risk of cold stress. Radiant heaters may be used to warm workers. Shielding work areas from drafts or wind will reduce wind chill. Use insulating material on equipment handles, especially metal handles, when temperatures drop below 30° F. Regularly used walkways and travelways shall be sanded, salted, or cleared of snow and ice as soon as practicable.

6.2.2 Administrative & Training Controls –Training in recognition and treatment is important. Supervisors, workers and coworkers should watch for signs of cold stress and allow workers to interrupt their work if they are extremely uncomfortable. Supervisors should also ensure that work schedules allow appropriate rest periods and ensure liquids are available. All employees should be informed of the dangers and destructive potential caused by unstable snow buildup, sharp icicles, and ice dams and know how to prevent accidents caused by them. They should use appropriate engineering controls, personal protective equipment and work practices to reduce the risk of cold stress. All of these measures should be incorporated into the relevant health and safety plans.

6.2.3 Procedure or Work Practice Controls –Work Practices and planning are important preventative measures. Drink plenty of liquids, avoiding caffeine and alcohol. It is easy to become dehydrated in cold weather. If possible, heavy work should be scheduled during the warmer parts of t

he day. Take breaks out of the cold. Try to work in pairs to keep an eye on each other and watch for signs of cold stress. Avoid fatigue since energy is needed to keep muscles warm. Take frequent breaks and consume warm, high calorie food such as pasta to maintain energy reserves

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6.2.4 PPE Controls -**Protective Clothing** is the most important way to avoid cold stress. The type of fabric also makes a difference. Cotton loses its insulation value when it becomes wet. Wool, silk and most synthetics, on the other hand, retain their insulation even when wet. The following are recommendations for working in cold environments:

- Wear at least three layers of clothing. An inner layer of wool, silk or synthetic to wick moisture away from the body. A middle layer of wool or synthetic to provide insulation even when wet. An outer wind and rain protection layer that allows some ventilation to prevent overheating.
- Wear a hat or hood. Up to 40% of body heat can be lost when the head is left exposed.
- Wear insulated boots or other footwear.
- Keep a change of dry clothing available in case work clothes become wet.
- With the exception of the wicking layer do not wear tight clothing. Loose clothing allows better ventilation of heat away from the body.
- Do not underestimate the wetting effects of perspiration. Oftentimes wicking and venting of the body's sweat and heat are more important than protecting from rain or snow.
- Regular inspections on cold weather supplies (e.g.

hand warmers, jackets, shovels, etc) should be carried out to ensure that supplies are always in stock and in good condition.

7.0 Training

SEI Solutions will provide Cold Stress training for all employees.

7.1 Training Content-Training will cover the following topics:

- 7.1.1 Cold Stress Program and Policy
- 7.1.2 Responsibilities
- 7.1.3 Hazard Recognition & Control
- 7.1.4 First Aid Treatment on cold induced injuries

7.2 Personnel Training–

SEI Solutions personnel shall receive the following training:

7.2.1 All employees shall receive Cold Stress awareness training.

7.2.2 All employees shall receive annual first aid training for cold weather injuries and/or illness.

7.3 Training Frequency-

Training and re-training frequency shall be as follows:

7.3.1 Awareness training be refreshed annually

7.4 Reports -The supervisor must complete an Accident/Incident Report upon notification of potential frostbite or hypothermia

Material Handling

SEI Solutions has recognized that some form of Material Handling can and does occur during many routine tasks. The following guidelines and procedures were developed to ensure the safety of our employees.

Operating Lifts, Cranes, Hoists, Mobile Equipment, or Slings

Use caution and follow proper procedures to prevent injuries and accidents involving Lifts, Cranes, Hoists, Mobile Equipment, or Slings. If you operate Lifts, Cranes, Hoists, Mobile Equipment, or Slings, it is important to maintain the equipment in good working order and to use it only as directed by the manufacturer. If you work in the area, be alert and aware of the location of Lifts, Cranes, Hoists, Mobile Equipment, or Slings.

Operating Equipment

- Only specially trained employees are allowed to operate or use Lifts, Cranes, Hoists, Mobile Equipment, or Slings. They are taught how to inspect the equipment, rig the load, safely move the load to the desired location, and use access provided to get on or off of equipment. The operator should never jump to the ground. Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit. Operator shall ensure any equipment being used has the protection of an enclosed cab. If this is not possible the operator must wear approved eye protection. Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.

Equipment Condition

Inspect Lifts, Cranes, Hoists, Mobile Equipment, or Slings every time you use them. Visually check the following equipment daily:

- All functional operating mechanisms
- Air and hydraulic systems
- Chains, rope slings, hooks and other load carrying equipment
- Equipment shall have a working signal alarm for backing up.

If you see deformities, cracks, excessive wear, twists, stretches, or any other deformities remove the Lift, Crane, Hoist, Mobile Equipment, or Sling from service until it can be replaced or repaired.

Inspect cranes on a schedule

Once a month, conduct a formal inspection of the following parts of cranes:

- Hooks and chains
- Running ropes
- Sheaves
- Bearings

Record these inspections in writing. Include the following information in the written report:

- The date of the inspection
- The serial number or other identifiers of the hook, chain, or rope being inspected
- The signature of the person who performs the inspection

Once a year, or more often if the equipment is used often, perform a complete inspection of all cranes. Follow the instructions given by the manufacturer. Before using new or modified cranes, test the following crane functions:

- Hoisting and lowering
- Trolley travel
- Bridge travel
- Limit switches
- Locking and safety devices

Maintenance

Perform preventative maintenance on the schedule recommended by the manufacturer. Before adjusting and repairing Lifts, Cranes, Hoists, Mobile Equipment, or Slings, ensure that the following procedures are followed:

- Locate the crane, hoist, or sling in a place where it will not interfere with other cranes and operations
- Isolate the equipment from all sources of energy by following lockout/tagout procedures
- Place warning signs in visible locations on the equipment and on the floor below the Lifts, Cranes, Hoists, Mobile Equipment, or Slings.

Make all adjustments, replacements, and repairs as necessary and as recommended by the manufacturer.

Fueling

The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall ensure that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

Overload Equipment

Overloading is one of the most dangerous things you can do with a crane, hoist, or sling. Never load these types of equipment above their rated loads. The rated load is the maximum load that the equipment is designed to lift and is marked on the side of the crane, hoist, or sling.

Proper Use of Equipment

Lifts, Cranes, Hoists, or Slings are designed to lift loads vertically. Side-pulling loads can result in damage:

- The cable guide can bend or break
- The wire rope can become jammed in the hoist housing
- The drum can be damaged
- The chain or wire rope can break

Secure the load

To prevent the load from swinging when you pick it up, position the hooks directly over the load. Secure and properly balance every load lifted. Make sure that the hoist chain or hoist rope is free of kinks and twists and is not wrapped around the load.

Load Handling

When moving the load, follow these safe work practices:

- Never ride on the load, hook, or lifting device while hoisting, lowering, or traveling
- Avoid carrying loads over other employees
- Do not lower the load below the point where less than two full wraps of rope remain on the hoisting drum
- Do not leave your position at the controls while the load is suspended (if you are the operator).
- If you are an employee who works in the vicinity of cranes, hoists, or slings, stay alert. Work facing cranes and hoists so that you know where they are at all times. Do not walk under suspended loads.
- Tag lines shall be used unless their use creates an unsafe condition.
- Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

Summary

Never use hoists, slings, cranes, or mobile equipment unless you are properly trained and the equipment passes all required inspections. If you identify damaged or worn parts when inspecting equipment, take the equipment out of operation until the parts are repaired or replaced. Follow safe work practices when securing and moving the load. Never overload cranes, hoists, or slings. If you work in the area of hoists, slings, and cranes, or mobile equipment, stay out of the path of the load, and stay alert. Unauthorized personnel shall not be permitted to ride on equipment unless it is equipped to accommodate passengers safely.

Identification, Prevention, and Control of Workplace Hazards

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, because of workplace inspections, or by employee reports.

All recognized safety and health hazards shall be eliminated or controlled as quickly as possible, subject to priorities based upon the degree of risk posed by the hazards. The preferred method of hazard abatement shall be through application of engineering controls or substitution of less hazardous processes or materials.

Total reliance on personal protective equipment is acceptable only when all other methods are proven to be technically and/or economically infeasible.

A Job Safety Analysis, (JSA) will be completed prior to the start of any job. The JSA will identify hazards and potential hazards also identifying how the employees will be protected from these hazards. Hazards are classified/prioritized and addressed based on the risk associated with the task.
The Job Safety Analysis, (JSA) process will be used for routine and non-routine activities as well as new processes, changes in operation, products, or services as applicable. All site-specific contingency information will be identified on the JSA. The Supervisor or Forman running the job will go over the JSA with the crew before any work starts. All crew members will review and sign the JSA acknowledging their understanding of the information.
Please see Appendix B (JSA)

Principles:

Employees will be trained in the hazard identification process including the use and care of proper PPE. Safety and Health Hazards shall be eliminated or controlled by one of the 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 more limited hazard potential. Some examples include brush painting instead of spray painting to reduce inhalation hazards, welding instead of riveting to reduce noise levels, use of safety

cans instead of bottles to store flammable liquids, etc. Care must be exercised in any substitution to ensure that the substitute materials are technically acceptable and to avoid introducing a new or unforeseen hazard.

Isolation-

Hazards are controlled by isolation whenever an appropriate barrier or limiter is placed between the hazard and an individual who may be affected by the hazard. This isolation can be in the form of physical barriers, time separation, or distance. Examples include machine guards, electrical insulation, glove boxes, acoustical containment, and remote-controlled equipment.

Ventilation-

The control of a potentially hazardous airborne substance by ventilation can be accomplished by one or 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. Local exhaust ventilation is generally the preferred and more economical method of hazard control.
However, dilution ventilation can be very effective for the removal of large volumes of heated air or for the removal of low concentrations of non-toxic or low toxicity contaminants from minor and decentralized sources.

Administrative Control-

This method of hazard mitigation depends on effective operating practices that reduce the exposure of individuals to chemical or physical hazards. These practices may take the form of limited access to high hazard areas, preventive maintenance programs to reduce the potential for leakage of hazardous substances, or adjusted work schedules which involve a regimen of work in high hazard and low hazard areas. Adjusted work schedules are appropriate only when the hazard is recognized as having a limit below which nearly all workers may be repeatedly exposed without adverse effect.

Personal Protective Equipment-

This method of hazard control is least preferred because personal protective devices may reduce a worker's productivity, while affording less effective protection against the recognized hazard than other methods of control. Nevertheless, there are instances where adequate levels of risk reduction cannot be achieved through other methods, and personal protective devices must be used, either alone or in conjunction with other protective measures.

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 because 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 Company employees. To ensure that appropriate hazard control techniques are applied, the Safety and Health Manager shall participate in the review of plans and specifications for construction and renovation projects. Recommendations shall be submitted in writing. Projects that involve potential health hazards such as toxic material, radiation, noise, or other health hazard shall be designed in accordance with established principles of good safety and industrial hygiene engineering.

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 Safety and Health Manager for review. Recommendations for changes/additions to the procedures for safety and health purposes shall be submitted in writing 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 Company facilities. Company organizations responsible for developing specifications for such purchases should coordinate with cognizant Safety and Health Manager to ensure that health and safety requirements are considered in these specifications. Similarly, contracts that require work to be performed by host

contract personnel at Company facilities should be coordinated with the Safety and Health Manager.

4. Interim Hazard Abatement Measures.

During the time needed to design and implement permanent hazard control measures, immediate, temporary measures are needed. Where engineering controls are not immediately applicable, administrative controls and/or personal protective equipment are appropriate for use as interim hazard abatement measures.

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.

Two criteria may be applied to determine whether engineering controls are feasible. First, a control is technologically feasible if it is available "off the shelf" or if technology exists which can be adapted to the hazard in question. Second, a control is economically feasible if it can be shown that the cost of the control is justified by the benefit it produces. On the other hand, if the expected reduction of the hazard through implementation of engineering control is insignificant in terms of increased protection, and the cost of implementing the control is great, then the control is economically infeasible.

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 ensure 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 Company employees. All Company employees are encouraged 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 Safety and Health Manager for assistance, as necessary. Supervisors will keep the reporting employee informed of all actions taken.

Any employee (or employee representative) may submit a written report of an unsafe or unhealthful working condition directly to the Safety and Health Manager.
The Safety and Health Manager will investigate all reports of hazards brought to its attention. The Safety and Health Manager will provide an interim or complete response in writing to the originator of the report of hazard. 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 Safety and Health Manager or with actions taken to abate a confirmed hazard, he/she shall be encouraged to confer with the Safety and Health Manager to discuss the matter further.

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 Safety and Health 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.

Eye and Face Protection-

Most occupational eye injuries can be prevented using 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 Safety and Health 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, hot liquids, and molten metals.
- 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, activities shall procure enough heavy-duty goggles and/or plastic eye protectors which afford the maximum amount of protection possible.

If these personnel wear 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 Company personnel must conform to the following design and standards:

a) Provide adequate protection against the 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.

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

a) Safety Spectacles. Protective eyeglasses 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.

b) 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.

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

Welders' 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.

d) 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.

e) 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 Safety and Health Manager maintains a supply of various eye and face protective devices. Personnel requiring prescription safety glasses must contact the Safety and Health Manager.

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.

Hearing Protection-

Hearing protection devices are the first line of defense against noise in environments where engineering controls have not reduced employee exposure to safe levels. Hearing protective devices can prevent significant hearing loss, but only if they are used properly.

The most popular hearing protection devices are earplugs which are inserted into the ear canal to provide a seal against the canal walls. Earmuffs enclose the entire external ears inside rigid cups. The inside of the muff cup is lined with acoustic foam and the perimeter of the cup is fitted with a cushion that seals against the head around the ear by the force of the headband.

Preformed earplugs and earmuffs should be washed periodically and stored in a clean area, and foam inserts should be discarded after each use. It is important for you to wash hands before handling pre-formed earplugs and foam inserts to prevent contaminants from being placed in the ear which may increase your risk of developing infections.

Also, check hearing protective devices for signs of wear or deterioration.

Replace devices periodically.

The Safety and Health Manager maintains a supply of a variety of disposable foam ear inserts and earmuffs.

Respiratory Protection-

Respiratory hazards may occur through exposure to harmful dusts, fogs, fumes, mists, gases, smoke, sprays, and vapors. The best means of protecting personnel is using engineering controls, e.g., local exhaust ventilation. Only when engineering

controls are not practical or applicable shall respiratory protective equipment be employed to reduce personnel exposure.

The Safety and Health Manager is responsible for the Respiratory Protection Program at the Company. Workers requiring the use of respirators must first obtain medical approval from a Physician or Other Licensed Health Care Professional to wear a respirator before a respirator can be issued. The Safety and Health Manager conducts respirator training and fit tests and is responsible for determining the proper type of respiratory protection required for the hazard.

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 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 for chemical 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.
- Recognize indications that cartridges and canisters are at their end of service. If in doubt, change the cartridges or canisters before using the 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.

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 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 employees and contractors 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 based on the material being handled, the 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, and 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 SDS sheets 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. The Safety and Health Manager can assist is 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.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type 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. To protect the hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock out machines or tools and disconnect the power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machinery, such as drill presses, mills, lathes, and grinders.

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

Safety Shoes/Boots-

Safety shoes shall be worn in the shops, warehouses, maintenance, wash bay, and other areas as determined by the Health and Safety Branch. Recommendations for safety footwear shall be approved by the Health and Safety Branch. All safety footwear shall comply with American National Standards Institute (ANSI) Standard ANSI Z41-1991, "American National Standard for Personal Protection - Protective Footwear.

Responsibilities-

a. Supervisor - Reviews employees work situation and recommends safety

footwear as appropriate in accordance with established Institute policy. Request's safety shoes from the Safety and Health manager for new employees or as indicated for replacement. Ensures that all employees under his supervision use and maintain safety footwear. Makes determination on the need for replacement or repair of safety shoes.

b. Employee - Wears approved safety shoes in all areas requiring safety footwear as determined by the supervisor and the Health and Safety Manager.

c. Health and Safety Manager - Consults with supervisors concerning safety shoe requirements and approves issuance of all safety shoes.

Procedures-

a. Supervisors must review employee's work situation in consultation with the Health and Safety Manager to decide the need for safety footwear and appropriate types.

b. Any employee desiring to replace his/her safety footwear may purchase approved safety shoe at vendor of his/her choice. Safety shoes purchased shall comply with American National Standards Institute (ANSI) Standard ANSI Z41-1991, "American National Standard for Personal Protection - Protective Footwear.

c. If an employee is unable to find appropriate safety footwear at the suggested vendors, he or she should check with the Health and Safety Manager for alternate procedures.

f. Employee who wants to have their footwear repaired, should be encouraged to do so. Some footwear is designed to be repaired, and some is not. Repairs would include such items as new soles and heels.

JOB INFORMATION

Date:	Job Name:	Job Number:
Physical Address:		Supervisor:
Location Within Plant (Plant Identifier Building/Door/Etc.):		
Plant Contact's Name:		Plant Contact's Phone #:

EMERGENCY INFORMATION

Plant Emergency Phone #:	Police, Fire, EMS #
Job Location Within the Plant (Specific Vessel, Building, Door)	
Evacuation Point:	Wind Direction:
Warning and Evacuation Signals, Procedures, and Evacuation Point(s) have been reviewed with the crew: YES ☐ NO ☐	

JOB TASK/SCOPE-A NEW JSA *MUST* BE COMPLETED WHEN THE TASK OR SCOPE CHANGE.

Industrial Vacuum: Liquid ☐ Dry ☐	Hose Size: : 4" ☐ 6" ☐ 8" ☐ Other ☐
CHECK TYPE OF WORK TO BE PERFORMED (CHECK ALL THAT APPLY):	
Water Blasting: Hotsy (Low Pressure) ☐ 10,000 Psi ☐ 20,000 Psi ☐ 40,000 Psi ☐	
Other (Describe work and be specific);	

JOBSITE EXPOSURES

Hazard Identification: Items checked below relate to existing conditions or conditions which may develop as a result of this work scope or outside operations.

Physical Hazards (Check all that apply)

Confined Space	☐	Struck by/contact with	☐
Electrical Shock Hazard	☐	Overhead Work	☐
Elevation/Site Terrain	☐	Slips, Trips, Falls	☐
Fall from Elevation	☐	Underground Utilities	☐
Fire Hazard	☐	Caught In / Pinch Points	☐
Heavy Equipment	☐	Vehicle / Train Traffic	☐
Line of Fire	☐	Limited Visibility	☐
Steam Hazard	☐	Hoses in Walkway	☐
Rotating /Spinning/Operating Equip:	☐	Poor Lighting	☐
Engulfment Hazard	☐	Trench Operations	☐
Contact with Hot/Cold Surfaces	☐	Adverse Weather	☐
Congested Area	☐	Falling Object Hazard	☐
Engulfment by solid or liquid material	☐	Excess Pressure / Temp	☐

Water____,Oil_____,Ice_____,Grease on walking surface

Health Hazards (check all that apply)

Exposure to Chemical(s)	☐
Contact with Contaminated Equipment	☐
Material Handling (Lifting Heavy / Awkward Objects)	☐
Heat / Cold Stress	☐
High Noise (>85db)	☐
Biological Hazards: (Sewer work / Pigeon Droppings)	☐
Atmospheric Hazard (Particulates, Vapors, Gases)	☐
Chemical / Thermal Burn Potential	☐
Cut Hazard	☐
Insect / Varmint Hazard	☐

HAZARD MANAGEMENT

JOB TASK	HAZARDS OF TASK IDENTIFIED	HOW THE HAZARD WILL BE ELIMINATED OR CONTROLLED

SAFETY EQUIPMENT REQUIRED (CHECK ALL THAT APPLY)

☐ Lifeline/Retrieval Line	☐ Ladder	☐ 5 Gas Air Monitor	☐ Safety "T"
☐ Retractable Lifeline	☐ Rope Ladder	☐ Personal 4 Gas Air Monitor	☐ Whip-Checks
☐ Full Body Harness	☐ Portable Lighting (500W Quartz)	☐ Personal CO Meter	☐ Traffic Cones
☐ Lanyard	☐ Portable Lighting Low Volt (Vapor Proof)	☐ Personal HCN Meter	☐ High Vis Vest
☐ Double Lanyard	☐ Portable Lighting Low Volt (Explosion Proof)	☐ Supplied Air	☐ Life Vest
☐ Anchor Point / Strap	☐ Ground Fault Circuit Interrupter (GFCI)	☐ SCBA	☐ Rescue Buoy / 90' Rope
☐ Winch / Tripod	☐ Blower / Air Mover	☐ Full Face Respirator	☐ Caution Tape / Danger Tape

HAZARD CONTROL METHODS (CHECK BOX NEXT TO APPLICABLE CATEGORIES AND THEN COMPLETE THE SECTION)

☐ General Safety and Health
- ☐ Competent Person/Supervisor has conducted an inspection of the job site this work shift.
- ☐ Housekeeping/Trash Disposal
- ☐ Crew briefed on job/job site safety
- ☐ First Aid Supplies
- ☐ Certified CPR/First Aid Person
- ☐ MSDS Sheet(s) Available
- ☐ Safety Shower/Eye Wash Station
- ☐ Evacuation Route/ Reporting Area
- ☐ Emergency Phone Location & ##

☐ Fire Protection and Prevention
- ☐ Fire Extinguisher available
- ☐ Approved containers for flammable and combustible materials
- ☐ Proper Flam / Comb storage
- ☐ Proper Signage

☐ Signs Signals and Barricades
- ☐ Barricade Tape W/ Tags
- ☐ Caution Flashers
- ☐ Traffic Cones / Hi-Vis apparel
- ☐ Tags / Signs
- ☐ Other:_____

☐ Lightning
- ☐ Adequate Illumination provided
- ☐ Proper type for location and task
- ☐ Back-up plan for primary system failure (i.e.: *Helmet lights*)

☐ Material Handling and Storage
- ☐ Materials Properly Stacked /Stored
- ☐ Proper Lifting Techniques
- ☐ Ergonomics

☐ Electrical
- ☐ GFCI in place and tested each shift
- ☐ Temp Lighting grounded and guarded
- ☐ Extension cords inspected
- ☐ Electrical tools inspected / grounded

☐ Scaffolds
- ☐ Inspected before each shift
- ☐ Adequate / rated for job
- ☐ Pins / connectors secured
- ☐ Safe access provided
- ☐ Guardrails / toe boards
- ☐ Tagged
- ☐ Properly planked
- ☐ Fall Protection required on scaffold

☐ Ladders
- ☐ Inspected and in good condition
- ☐ Proper for the job
- ☐ Properly set-up
- ☐ Ladder extended 3 feet above working surface

☐ Fall Protection
- ☐ Full body harness required
- ☐ Lanyard_____ 100% tie off_____
- ☐ Retractable lifeline
- ☐ All fall protection inspected each shift
- ☐ Proper Anchor Point (5000lbs)
- ☐ Vertical Lifeline w/ grab device
- ☐ Horizontal lifeline
- ☐ Hole Covers
- ☐ Warning Line (requires approved plan)

☐ Aerial / Man lifts
- ☐ Inspection completed & documented
- ☐ Operated by a person trained on that that device with documentation
- ☐ Ground safety person required
- ☐ Fall protection is required
- ☐ Safe working distance _____ (refers to live electrical lines)

☐ Tools
- ☐ Inspected before each shift
- ☐ Guards in place
- ☐ Proper for job
- ☐ Safety devices working
- ☐ Grounded / plugged in to GFCI
- ☐ Chicago fittings pinned or wired
- ☐ Proper Cutting Tool (Knifes require cut resistant gloves)

☐ LOTO
- ☐ Lock-Out Tag-Out is required
  What type of energy must be controlled _____
- ☐ Stored energy present (gravity, pressure, etc.)
  What type: _____
  How is the stored energy being managed?
  What method of Lock-out is in use: (circle)
  Locks & Tags Permit/Paper Tag Only
- ☐ Supervisor walked the LOTO process with plant's **Authorized Person** to ensure LOTO.
- ☐ Authorized Person performed a Try-Out
- ☐ Blinding/Blocking required and in-place

☐ Confined Space Work
- ☐ Completed Confined Space Document is properly completed
- ☐ Confined Space procedures have been reviewed with the entire crew
- ☐ All required safety equipment / rescue team is on-site, set-up and r to go
- ☐ Plant (owner) has issued permission for entry

☐ Excavations and Trenches
- ☐ Ladders / safe access
- ☐ Spoil pile placement
- ☐ Proper shoring / sloping / benching
- ☐ Inspected by competent person
- ☐ Barricades

☐ Rail, Crane, Traffic Control
- ☐ Derailers 50 feet from work at each end
- ☐ Derailers are locked out at each end
- ☐ Blue flag / light > 150 feet from each end
- ☐ Employees are trained on rail safety
- ☐ All parking 10' minimum from tracks
- ☐ Rigging done by competent person
- ☐ Rigging inspected prior to each use
- ☐ No work under elevated load
- ☐ All equip. properly maintained & inspected
- ☐ Personnel in traffic areas are wearing high-vis

☐ Hydro blasting Safety
- ☐ Hydroblasting rules reviewed with the crew
- ☐ All hydroblast tool / equipment are in serviceable condition
- ☐ Fittings and hoses inspected
- ☐ All hoses have whip-checks
- ☐ Pump is inspected and grounded
- ☐ Pump wheels chocked and area barricaded
- ☐ **Lancing / Moleing**-*check & complete if performing*
- ☐ Foot pedal in use
- ☐ Person operating pedal is controlling Mole or Lance (if NOT variance is REQUIRED)
- ☐ Guards / Anti-withdrawals are in use
- ☐ Flex lance is marked with safety markings
- ☐ Stinger of _____ inches shall be used
- ☐ **Shotgunning**- *Check & complete if performing*
- ☐Barrel length of shotgun is 48 inches
- ☐ Barrel variance in use (barrel<48")

☐ Vacuuming Safety
- ☐ Vacuum rules reviewed with the crew
- ☐ Vacuum tee and all other required safety devices are in place and operations
- ☐ Vacuum truck is grounded, wheels chocked, and barricades in place
- ☐ Vacuum truck has been inspected, tank has been inspected and is empty or contents are known, all lids and hatches are tightened down.
- ☐ All vacuum tools / equipment are in serviceable condition
- ☐ Fittings and hoses inspected
- ☐ Equipment in use is compatible with material being vacuumed

☐ Handrails, Catwalks, & Structures
- ☐ Do structural components, walkways, and handrails appear to be clean and structurally sound?
- ☐ Are walking surfaces, planks, and grating properly secured without large gaps or openings?
- ☐ Are handrail sections properly secured and do they protect the entire work area from the fall hazard?

PPE-ALL EMPLOYEES MUST WEAR HARD HAT, SAFETY GLASSES, STEEL-TOED BOOTS AND LONG SLEEVES (CHECK BOX NEXT TO ADDITIONAL REQUIRED PPE)

☐ If checked, the PPE requirements for this job may vary by task check with your supervisor before beginning any new work to ensure you have the proper *PPE.*

☐ Clothing
- ☐ Tyvek Suit
- ☐ Acid Suit
- ☐ Polycoated Saranex Suit
- ☐ Rain Suit
- ☐ Saranex Suit
- ☐ Mill Greens (splash)
- ☐ Flame Resistant Clothing (flash)
- ☐ Standard Work Uniform
- ☐ High Vis (vest, jacket, shirt)
- ☐ Life Vest (flotation)

☐ Gloves
- ☐ Leather
- ☐ PVC
- ☐ Neoprene
- ☐ Silvershield
- ☐ Kevlar
- ☐ High Voltage
- ☐ Other:_____

☐ Hearing Protection
- ☐ Ear Plugs
- ☐ Ear Muffs
- ☐ Both

☐ Foot Protection
- ☐ Metatarsal Boots
- ☐ Chemical Overboots
- ☐ Waterblast boots (steel toe & metatarsal)
- ☐ Rubber boots

☐ Eye Protection
- ☐ Faceshield
- ☐ Dust Goggles
- ☐ Splash Goggles

☐ Respiratory Protection

Supplied Air (req.for IDLH Atmospheres)
- ☐ SCBA
- ☐ Supplied Air (Line Feed)
- ☐ Escape Respirator

Air Purifying Cartridge
- ☐ Full Face — ☐ Acid
- ☐ Half Face (by approval only) — ☐ Organic
- ☐ Dust Mask w/ Exhaust Valve — ☐ HEPA
- ☐ Dust Mask — ☐ Other:_____

CONFINED SPACE DETERMINATION AND PRE-ENTRY HAZARD ASSESSMENT

Does this job require Lock-out / Tag-out Procedures?	☐ No – proceed	☐ Yes – Have you personally confirmed that the equipment has been locked-out and that all your affected personnel have placed personal locks in the appropriate location(s).
Does this job require personnel to enter a confined space?	☐ No – proceed	☐ Yes – Confined Space Permit must be complete and signed by Entry Supervisor before work begins.

I certify that all required precautions have been taken, the necessary equipment to safely perform the work is present and consistent with the requirements for the work to be performed in accordance to OSHA regulation, company policy and this completed JSA. Furthermore, I certify that I have personally conducted a walk-down of the job site and job set-up to ensure that all conditions are acceptable, and all safety elements are in place and operation. I certify that I have conducted a pre-job briefing with the crew and have discussed the scope of work and all critical safety details. I will ensure that the work performed will be consistent with the details I have specified in this JSA. I verify and attest that I have personally verified that the equipment on which or in which we will be working has been locked and tagged out of service.

Supervisor: _____ Date: _____ Time:_____

I attest, that I have read and understand this JSA, I have participated in a pre-job meeting, and I understand how to perform my job tasks safely and will do so.

Name	Time	Name	Time	Name	Time
Name	Time	Name	Time	Name	Time
Name	Time	Name	Time	Name	Time
Name	Time	Name	Time	Name	Time

Fleet Motor Vehicle Safety Program

MOTOR VEHICLE SAFETY POLICY

It is the policy of SEI Solutions LLC. to provide and maintain a safe working environment to protect our employees and the citizens of the communities where we conduct business from injury and property loss. SEI Solutions LLC. is committed to promoting a heightened level of safety awareness and responsible driving behavior in its employees. This program requires the full cooperation of each driver to operate their vehicle safely and to adhere to the responsibilities outlined in the Motor Vehicle Safety Program. Elements of this program include:

- Assigning responsibilities at all levels of employment.
- Vehicle use and insurance requirements
- Employee driver's license checks and identification of high-risk drivers.
- Incident reporting and investigation.
- Vehicle selection and maintenance.
- Training standards.
- Safety regulations.

I. RESPONSIBILITY

Management is responsible for successful implementation and on-going execution of this program. Supervisors and employees are responsible for meeting and maintaining the standards set forth in this program.

II. SCOPE

This policy applies to employees who operate vehicles on company business and will be reviewed by managers and supervisors to ensure full implementation and compliance.

III. ORGANIZATION AND RESPONSIBILITIES

Company President:

The President is responsible for directing an aggressive vehicle safety program.

Senior Management will:

A. Implement the Motor Vehicle Safety Program in their areas of responsibility.
B. Establish measurement objectives to ensure compliance with the program.
C. Provide assistance and the resources necessary to implement and maintain the program.

Human Resources Manager will:

A. Implement this Motor Vehicle Safety Program by:
    a. Collecting & reviewing MVR reports, Valid driver's licenses & insurance Certificates.
    b. Ensuring drivers have all DOT qualifications to meet the particular vehicle they are applying to drive.
    c. Providing Background Checks.
    d. Alerting management of drivers who are high risk to the company

SEI Solutions Supervisors will:

A. Investigate and report all incidents involving a motor vehicle used in performing company business. Forward all incident reports within 24 hours to the Safety Director.
B. Be responsible for taking appropriate action to manage high risk drivers as defined by this program.
C. Provide driver training either internally or through external means for high risk drivers.

Director of Safety & Health:

A. Issue periodic reports of losses for the president's review.

B. Revise and distribute changes to the Motor Vehicle Safety Program to managers, supervisors and drivers as necessary.
C. Maintain appropriate records.

SEI Solutions Employees will:

A. Always operate a motor vehicle in a safe manner as explained under the section titled, "Driver Safety Regulations."
B. Maintain a valid driver's license and minimum insurance requirements on personal vehicles used in company business.
C. Not operate vehicles that appear unsafe or appear to have discernible operating problems and will immediately report such vehicles to their supervisor.
D. Not allow an unauthorized individual to drive a SEI Solutions or rental vehicle on their behalf.
E. Complete a 360◦ walk around the vehicle every time the driver enters the vehicle/cab.
F. Complete or verify completion of a SEI Solutions Daily Inspection for each vehicle you operate.

IV. Vehicle Use:

1. Company Owned Vehicles
   a. Passenger Cars & Trucks
      i. No personal use of SEI Solutions passenger cars & trucks is allowed.
      ii. Under special circumstances and through approval of SEI Solutions upper management a SEI Solutions employee may be allowed to use an SEI Solutions owned passenger car or truck for personal use.

b. Commercial Motor Vehicles
    i. Employees must have an appropriate commercial driver's license and any applicable endorsements per Federal/State DOT to operate the vehicle.

2. Personal Vehicles on Company Business
    a. SEI Solutions employees who drive their personal vehicles on company business are subject to the requirements of this program. Employees using their own vehicles for SEI Solutions business use must:
        i. Maintain auto liability insurance with minimum limits as required by State law. It is recommended to have limits of $250,000 in bodily injury coverage per person, $500,000 in bodily injury coverage per accident.
        ii. Maintain current state vehicle inspections when required
        iii. Maintain their vehicle in a safe operating condition when driven on company business.
3. Rental Vehicles
    a. All rental vehicles must be approved by the company President.
    b. Collision damage waiver will be refused when renting vehicles in the U.S. Consult with SEI Solutions Operations Manager regarding waiving collision coverage.
4. Unauthorized Use of Vehicles
    a. Assigned drivers and other authorized employees will not allow an unauthorized individual to operate a company vehicle.
5. Subcontractors and Temporary Hire Employees
    a. Subcontractors and temporary employees from a staffing agency will be treated as company employees and will comply with the requirements of this program. Failure to meet all requirements will result in the immediate loss of driving privileges.

6. Loading & Vehicle Specifications
    a. Loads shall be secure and shall not exceed the manufacturer's specifications and legal limits for the vehicle.
    b. The vehicle shall be of the correct size and used for its intended purpose.

V. DRIVER SELECTION

1. Driver Evaluation:
    a. SEI Solutions employees will be evaluated and selected based on their driving ability. To evaluate employees as drivers, management will:
        i. Review the employee's Motor Vehicle Record (MVR) annually (more frequently if fleet size and reasons warrant).
        ii. Ensure the employee has valid driver's license.
        iii. Ensure the employee is qualified to operate the type of vehicle he/she will drive.

2. Driver Qualification:
    a. Effective driver qualification controls are important elements of a successful motor vehicle safety program. SEI Solutions Management developed and incorporated standards into this program, which reflect the skills necessary for satisfactory job performance while taking into consideration applicable Federal and state regulations
    b. The company has implemented three levels of driver qualification criteria. Use of any or all of these criteria is dependent upon the nature and scope of the driving requirements.
        i. State-regulated driver qualification parameters must be met. Regulatory information will be obtained from applicable state departments of transportation and motor vehicle services.

ii. Where applicable, drivers will comply with DOT Commercial Driver License (CDL) regulations.

iii. Drivers involved in interstate or foreign commerce in vehicles with Gross Motor Vehicle Weight Rating (GMVR) of 10,001 pounds or more, designed to transport 16 or more passengers, including the driver, or used in the transportation of hazardous materials in a quantity requiring placarding under the DOT Hazardous Materials Regulations, are subject to the requirements of the DOT Federal Highway Administration's Federal Motor Carrier Safety Regulations.

iv. Drivers involved in intra or interstate operations with GMVR of 26,001 pounds or more must have a CDL license and be enrolled in a DOT Drug and Alcohol Testing Program.

c. The following criteria was established to identify high risk drivers. A driver is unacceptable if the driver's incident/violation history in the past 5 years includes one or more of the following moving violation convictions: This list is not comprehensive and may have additions and deletions.

1. Driving under the influence of alcohol or drugs (DWI).
2. Hit and run
3. Failure to report an incident
4. Operating during a period of suspension or revocation
5. Operating a motor vehicle without the owner's authority.
6. Permitting an unlicensed person to drive.
7. Reckless driving.
8. Speeding (2 or more in a 1-year period).
9. Two preventable incidents in a 12-month period.

d. Drivers who are identified as high risk or in violation may be subject to several actions from SEI Solutions management including, but not limited to:
   i. Driver may be required to attend a Defensive or Safety Driving course on their own time & expense.
   ii. Driver may have their driving privileges suspended or revoked.

VI. INCIDENT RECORDKEEPING, REPORTING AND ANALYSIS

1. This company considers elimination of motor vehicle incidents a major goal. To meet this objective, all incidents will be reported to management, investigated, documented and reviewed by the SEI Solutions Safety Department. The investigation identifies need for:
   a. A more intensive driver training and/or remedial training.
   b. Improved driver selection procedures.
   c. Improve vehicle inspection and/or maintenance activities
   d. Changes in traffic routes.
2. Motor vehicle incident recordkeeping procedures consist of the following components:
   a. Documentation of causes and corrective action.
   b. Management review to expedite corrective action.
   c. Analysis of incidents to determine trends, recurring problems and the need for further control measures.

3. Responsibility:
   a. Implementation of these procedures remains the responsibility of both the driver and SEI Solutions Management.

i. Driver

1. Since the driver is the first person at the incident scene, he/she will initiate the information-gathering process as quickly and thoroughly as is feasible. (See Section VII)

ii. Management

2. Management will immediately proceed with a formal investigation to determine the underlying causes as well as what can be done to prevent similar occurrences. The SEI SOLUTIONS SUPERVISORS INCIDENT REPORT will be forwarded to the insurance claims office along with any additional support data (e.g., witness statements, photographs, police report, etc.).

4. Preventable/Non-Preventable Incidents:

a. The following definitions relate to motor vehicle incidents:

i. A ***motor vehicle incident*** is defined as "any occurrence involving a motor vehicle which results in death, injury or property damage, unless such vehicle is properly parked. Who was injured, what property was damaged and to what extent, where the incident occurred, or who was responsible, are not relative factors.

ii. A ***preventable incident*** is defined as "any incident involving the vehicle, unless properly parked, which results in property damage or personal injury and in which the driver failed to do everything he/she reasonably could have done to prevent or avoid the incident".

1. A properly parked motor vehicle is one that is completely stopped and parked where it is legal and prudent to park such a

vehicle or to stop to load/unload property. Vehicles stopped to load/unload passengers are not considered parked.

2. Parking on private property will be governed by the same regulations that apply on public streets and highways. A vehicle stopped in traffic in response to a sign, traffic signal or the police is not considered parked.

iii. The determination of preventability of an incident is the function of the SEI Solutions Incident Review Board consisting of Human Resources, Chief Operations Officer. & the Director of Health & Safety.

VII. EMPLOYEE INCIDENT REPORTING PROCEDURE

Employees will take the following actions when there are injuries to persons and/or damage to other vehicles or property:

1. If possible, move the vehicle to a safe location out of the way of traffic. Call for medical attention if anyone is hurt.
2. Secure the names and addresses of drivers and occupants of any vehicles involved, their operator's license numbers, insurance company names and policy numbers, as well as the names and addresses of injured persons and witnesses. Record this information on the Incident Report form (in the reporting packet). Do not discuss fault with, or sign anything for anyone except an authorized representative of SEI Solutions, or a police officer.
3. Take photos of all damage to other vehicles as well as company vehicles
4. Immediately notify George Humphrey (219) 250-0825 SEI Solutions Safety Director. If any injuries were involved and the Safety Director is not available, contact your supervisor immediately.

5. You will be contacted by SEI Solutions Maintenance Manager to advise you how to arrange for repairs to the vehicle. Do not have the vehicle repaired until you receive authorization from the Maintenance Manager.

When there is theft of or damage to your vehicle only:

1. If you did not witness the damage to the vehicle, you must notify the local police department immediately.
2. Immediately notify SEI Solutions Safety Director.

You will be contacted by the Maintenance Manager to advise you how to arrange for repairs or replacement of the vehicle. Do not have the vehicle repaired until you receive authorization from the Maintenance Manager.

3. Send a copy of the police report along with a memo outlining any additional information to the Safety Director.

VIII. VEHICLE SELECTION, INSPECTION AND MAINTENANCE

1. Introduction:
    a. Proper selection and maintenance of equipment are important aspects of this program. Reduced operational costs and incidents from vehicle defects are the direct result of a well implemented maintenance policy.
2. Vehicle Selection:
    a. Selection of vehicles begins with understanding the wrong equipment can result in excessive breakdowns, create hazards to personnel, incur costly delays and contribute to poor service and customer complaints. The company will purchase vehicles designed for their intended use.

3. Vehicle Inspection:
    a. The employee responsible for the vehicle will inspect the vehicle once per shift using the Daily Equipment/Vehicle Inspection Report forms and forward the report to SEI Solutions Main Office. More frequent inspections and reports may be required based on heavy use. DOT regulations require an after-shift inspection for Commercial Motor Vehicles.

4. Vehicle Maintenance:
    a. Vehicle maintenance can take the form of three distinct programs: preventive maintenance, demand maintenance, and crisis maintenance. While all three types have their role in the Motor Vehicle Safety Program, the most cost-effective control is preventive maintenance. The groundwork for a good preventive maintenance program starts with management. A review of manufacturer's specifications and recommendations for periodic preventive maintenance should be integrated with the actual experience of the vehicles.
    b. Preventive maintenance (PM) is performed on a mileage or time basis. Typical PM includes oil/filter changes, lubrication, tightening belts and components, engine tune-ups, brake work, tire rotation, hose inspection/replacement and radiator maintenance.
    c. Demand maintenance is performed only when the need arises. Some vehicle parts are replaced only when they fail. These include light bulbs window glass, gauges, wiring, air lines, etc. Other "demand maintenance" items involve vehicle components that are worn based on information from the vehicle condition report. These include tires, engines, transmissions, universal joints, bushings, batteries, etc. Since these situations are identified

through periodic vehicle inspection, they can be classified within the PM program.

d. Crisis maintenance involves a vehicle breakdown while on the road. While situations of this type may happen regardless of the quality of the PM program, it is an expensive alternative to not having an effective preventive maintenance program at all. Crisis maintenance situations should be minimized through proper PM procedures.

5. Recordkeeping:
    a. This company's vehicle selection, inspection and maintenance program is only as good as its recordkeeping procedures. Employees will forward all vehicle maintenance records for maintenance performed each quarter to the Equipment & Facilities V.P.

IX. DRIVER TRAINING

1. Drivers hired by this company to operate a motor vehicle will have the basic skills and credentials necessary to perform this function as confirmed through the driver selection process.
2. SEI Solutions employees, Subcontractors, and temporary hires such as from a staffing agency will receive a copy of this program as part of their initial orientation. A formal orientation program is established to help assure all drivers are presented with the company policy, understand their responsibilities and are familiarized with their vehicle. Areas that must be addressed, with the driver, include:
    a. Understand, review and given a copy of this policy.
    b. Understand and sign the Vehicle Assignment Agreement.
    c. Review individual Motor Vehicle Report (MVR).
    d. Understand incident reporting & emergency procedures

e. Review operation and controls of vehicle being assigned.
f. Inspect vehicle using Vehicle Inspection Form.

3. License Suspension:
   a. Drivers must notify Jan Tebout (219) 764-9800 Human Resources Manager if their license is suspended or revoked.

4. Remedial Training:
   a. Drivers may be required to attend a safe driving school (National Safety Council Defensive Driving course of equivalent) or an alcohol/drug abuse program on their own time and at their own expense if a review of the driver's MVR indicates:
      I. One or more violation convictions within any one-year period, or
      II. A conviction for driving while under the influence of alcohol or drugs.
      III. Also, depending on the severity of the conviction, the employee's driving privileges may be revoked and/or may result in employment termination.

X. DRIVER SAFETY REGULATIONS

1. Safety Belts:
   a. The driver and all occupants are required to wear safety belts when the vehicle is in operation or while riding in a vehicle. The driver is responsible for ensuring passengers wear their safety belts.

2. Impaired Driving:

a. The driver must not operate a vehicle at any time when his/her ability to do so is impaired, affected, influenced by alcohol, illegal drugs, prescribed or over-the counter medication, illness, fatigue or injury.
b. No driver shall operate a SEI Solutions vehicle within 4 hours of having consumed alcohol.
c. SEI Solutions adheres to a zero tolerance for violations of impaired driving.

3. Traffic Laws:
    a. Drivers must abide by the federal, state and local motor vehicle regulations, laws and ordinances.

4. Vehicle Condition:
    a. Drivers are responsible for ensuring the vehicle is maintained in safe driving condition. Drivers of daily rentals should check for obvious defects before leaving the rental office/lot and, if necessary, request another vehicle of the first vehicle is deemed unsafe by the employee. Drivers are encouraged to rent vehicles equipped with air bags and ABS brakes, where available.
    b. Vehicle shall be kept clean and organized at all times, periodic inspections will be made by management and your driving privileges may be suspended if vehicle does not pass inspection.
    c. Only approved items shall be stored in the passenger compartment of any SEI Solutions vehicle.

5. Mobile Devices
    a. The use of cellular phones, computers, messaging devices, or any mobile electronic device while operating a motor vehicle is prohibited. The intent of this policy is to control the circumstances under which an employee can use a cell phone or other electronic device while operating a motor vehicle

on company business (either in a company-owned, client-owned, or employee-owned vehicle).

b. Adherence to the following items is mandatory:
    i. Employees must comply with federal, state and local laws that exist to control the usage of mobile devices while operating a motor vehicle.
        1. Employees will not operate any mobile device while the vehicle is in operation.
        2. If the employee finds it necessary to make a phone call at any time while operating a motor vehicle, he/she must proceed to a safe off-road location to place the call.
        3. A vehicle equipped with eyes-free operation may be used while driving. Eyes-free means that the driver does not have to take their eyes off the road to place or accept a call. This is typically accomplished by pressing one button on the steering wheel and placing or accepting a call via voice prompts or commands.
        4. Employees will not send or review text messages while operating a motor vehicle.
        5. Employees will not operate any other mobile device while driving, including but not limited to a personal digital assistant (PDA), pocket PC, binaural headset-based audio device, such as an MP3 player or laptop computer.
        6. Navigation systems will be programmed before the trip is started, not while the motor vehicle is in operation.

6. General Safety Rules:
    a. Employees are not permitted to:
        I. Pick up hitchhikers.

II. Accept payment for carrying passengers or materials.

III. Use any radar detector, laser detector or similar devices.

IV. Push or pull another vehicle or tow a trailer without prior approval from the Maintenance Manager.

V. Transport flammable liquids or gases unless a DOT or Underwriters' Laboratories approved container is used, and only then in limited quantities.

VI. Use of burning flares will be discouraged. The preferred method is the use of reflective triangles.

VII. Assist disabled motorists or incident victims beyond their level of medical expertise. If a driver is unable to provide the proper medical care, he/she must restrict his/her assistance to calling the proper authorities. Your safety and well-being are always to be protected.

VIII. Never work on or perform preventative maintenance on a SEI Solutions vehicle without approval from Maintenance Manager.

7. Company and Personal Property:
   a. Employees are responsible for company property such as computers, work papers and equipment under their control. The company will not reimburse the employee for stolen personal property.

Defensive Driving Policy

SEI Solutions is strongly committed to a sound and thorough defensive driving policy. .
Those principles include emphasis on the following elements:

- Good vision,
- Alertness,
- Sound judgment, and
- Fast reactions.

Our policy will be implemented as follows:

- Initial training of new hires within 3 months of their beginning work dates, and
- Periodic performance checks by George Humphrey, Director of Safety.

Retraining will include the following specific courses: according to the following schedule: every three years
While there are no regulatory requirements that mandate the existence of a defensive driving policy, it makes excellent business sense to have such a policy in place. Underlying the policy is our corporation's strong commitment to safety on the highways.
While operating company vehicles, drivers should always drive in the safest and most professional manner possible. The likelihood of accidents will be minimized, and a positive image for the company will be promoted in the eyes of the general public. Specifically, our drivers must operate company vehicles in accordance with all provisions of Part 392 - Driving of Motor Vehicles of the Federal Motor Carrier Safety Regulations (FMCSRs).

Many factors impact the operation of vehicles on the roadways, including:

- Light levels,
- Weather,
- Pavement condition,
- Traffic conditions,
- Mechanical condition, and
- Operator condition.

A successful defensive driver exhibits five main qualities: extensive knowledge, alertness, good judgment, foresight, and driving skill.
The core concepts of defensive driving are:

- Recognize the hazard.
- Understand the defense.
- Act in time.

If these principles are followed carefully, the results will be improved safety on the highways and a positive image for our company.

Defensive Driving Procedures:

Intersection
Getting into and out of intersections without an accident is a mark of a good defensive driver. Besides your own skill level, intersections also demand anticipation of the actions of other drivers and taking appropriate evasive action as required.

Backing
Backing is an extremely hazardous maneuver. If you are backing with the assistance of a guide, the ultimate responsibility for the safety of the backing maneuver remains with you as the driver.

Front-End Collisions
The primary way to avoid front-end collisions is by maintaining a safe and adequate following distance. You should be prepared for possible obstructions on the roadway, either in plain sight or hidden by curves or the crests of hills. A special situation occurs at night, when speed should be kept to a level that will allow you to stop within the distance illuminated by the headlights of your vehicle.

Rear-End Collisions
As a driver, you risk being struck from behind if you do not maintain an adequate margin of safety in your own following distance. If enough space is not allowed in front of your vehicle, chances go way up that somebody can (and will) impact you from the rear.

Passing
Failure to pass safely indicates faulty judgment on your part as a defensive driver, and failure to consider one or more of the factors that need to be checked:

- Is there enough room ahead?
- Is there adequate space to move back into your lane of traffic after passing?
- Have you signaled your intentions?

Being Passed
As a driver, you must be aware of the actions of other drivers, and give way if another driver begins to sideswipe you or to cut you off. A good defensive driver will avoid problems with this kind of accident situation.

Encroaching on Other Traffic Lanes
Observant defensive drivers will not usually get trapped when other drivers change lanes abruptly. In the same manner, entrapment in merging traffic can be successfully avoided by a good defensive driver with a little preplanning and willingness to yield. Blind spots are not valid excuses for this kind of accident - allowances must be made in areas of limited sight distance.

Railroad Grade Crossings
Driving across railroad crossings, or in areas where there are rail vehicles of some sort, demands special care. Careful observance of the traffic situation is your best defense.

Oncoming Traffic
A defensive driver will avoid a collision with an oncoming vehicle at all costs. Even if the vehicle enters your lane of traffic, an accident can be avoided with some evasive maneuvers.

Turning
Turning, like passing, is a dangerous maneuver, and demands special care and an observant eye from you as a defensive driver. You should be aware of other vehicles in your path, and of the complete configuration of the turn you are about to undertake.

Pedestrians

As a sensible defensive driver, always assume that if there is a pedestrian (or small vehicle of some sort) involved in a situation, slowing down is your best defense. Be certain to give people and small vehicles the benefit of the doubt.

Extreme Weather and Road Conditions

Bad weather and other road hazards place special stress upon any defensive driver. The best rule in any kind of bad weather or extreme road condition is get off the road safely and as soon as possible. If you absolutely must continue, slowing way down and increasing following distance are your best defenses, along with increased awareness. All SEI Solutions drivers will be educated on the dangers of, and the company's expectations for, driving in the following extreme weather and road conditions.

A SEI Solutions expectation that applies to all of the situations described below is that you (as a driver) are required to contact your immediate supervisor or night dispatch in the event a delay caused by weather or other road conditions will affect pick up or delivery schedules.

Fog

SEI Solutions drivers will receive safety training in fundamental fog-driving techniques. Fog reduces available visibility and impairs distance perception, making it perhaps the most dangerous type of extreme weather condition.

Because of this, it is SEI Solutions 's policy that, whenever possible, drivers are to avoid driving in foggy conditions. Pull off the road and park safely until such time as the fog dissipates or is burned off, if at all possible. If you cannot safely pull off the road, follow these procedures:

- You should never assume the depth or thickness of any fog. Fog can range from a momentary blurring of the windshield to being several miles thick.
- Slow your vehicle's speed. Reduction in speed should be done gradually in order to avoid becoming a hazard for other motorists. Determining a correct and safe speed depends on the thickness of the fog and is left to your best judgment.
- Use low-beam headlights only when driving in fog. Low-beams serve two purposes. They help you see the immediate roadway and also allow other motorists to see your vehicle.
- Avoid the use of high-beam headlights while driving in fog. The water particles that make up fog will reflect more light back at you than onto the roadway when high beams are used, and will further reduce visibility for you.
- You should make use of windshield wipers and the defroster when driving in fog. Driving in foggy conditions will cause a constant fine mist of water to develop on the vehicle's windshield, reducing visibility in the process. Using the windshield wipers and defroster will alleviate this condition.
- Avoid passing other vehicles while driving in fog.
- You should avoid stopping on any roadway while driving in foggy conditions unless absolutely necessary. If you must stop, use the emergency or breakdown lane, activate your emergency flashers, turn off the headlights, and follow SEI Solutions's breakdown procedures (see Vehicle Breakdown & Road Repair policy).

Rain

SEI Solutions drivers will receive training in fundamental safety procedures for driving in rainy conditions. Rain causes roadways to become slippery, especially when it first begins. Roadways become covered with a thin layer of oil and other residues. When rain mixes with this layer, it results in an extremely slippery and dangerous road surface. This condition remains until additional rain can

break down and wash away the oily mixture from the pavement. This process can take anywhere from a few minutes to several hours, depending on the severity of the rain.
Water on the road surface can also create a potential hazard of hydroplaning. Hydroplaning happens when a thin layer of water separates the vehicle's tires from the road surface. When a vehicle is hydroplaning, it is literally riding on water. When the tires ride on water, they lose all traction and create an extremely dangerous situation. The faster a vehicle travels on standing water, the greater the chance of hydroplaning. Reducing speed is the best and safest way to avoid hydroplaning.
Rain also reduces visibility. Because rain presents these hazards, SEI Solutions drivers are expected to adhere to the following procedures when driving in rainy conditions:

- You should slow the vehicle's speed to avoid hydroplaning. Reduction in speed should be done gradually in order to avoid becoming a hazard for other motorists. Determining the correct and safe speed depends on how heavy the rain is and will be left to your best judgment.
- You are expected to increase your following distance from other motorists. Since rain causes the road surface to become slippery, you need to allow for greater stopping distance if the need to stop arises.
- You should make use of windshield wipers and the defroster when driving in rain. Driving in rainy conditions will cause a constant film of water to develop on the vehicle's windshield, reducing visibility in the process. Using the windshield wipers and defroster will alleviate this condition.
- You should avoid passing other vehicles while driving in rain. In addition, you are encouraged to follow other vehicles at a safe distance since vehicles traveling ahead will throw water off the pavement and leave "tracks". Driving in these tracks will give you the best possible traction under rainy conditions.

Snow
SEI Solutions drivers will receive training in fundamental safety procedures for driving in snowy conditions. Snow, depending on the type and severity, can present a variety of dangerous conditions. Because of this, the following procedures have been developed for this defensive driving policy:

- Light, powdery snow presents few problems since it is quickly blown of the road surface. However if there is enough of this type of snow to cover the roadway, it will form a slick, smooth surface. You should reduce speed and increase following distance. Determining the correct speed and safe following distance will be left to your best judgment.
- Heavier, slushy snow can affect vehicle control. If snow becomes hard packed it can cause an ice hazard on the road surface. Again, you should reduce speed and increase following distance. Determining the correct speed and safe following distance will be left to your best judgment.
- All slow maneuvers such as starting out, steering, backing, and turning should be done smoothly and with extreme care to minimize skids and slides.
- Falling or blowing snow can greatly reduce visibility. In addition, falling and blowing snow can make it hard to see the road, road markings, road signs, and off ramps. If you must continue in snowy conditions, reducing speed and increasing following distance are the best techniques a driver can use to maintain vehicle control.
- As with driving in foggy conditions, the use of high beam headlights while driving in snowy conditions should be avoided at all times. The high-beam "shooting" light will reflect off falling and blowing snow and reflect back at you, further reducing visibility.
- SEI Solutions drivers will also be educated on the dangers of "snow hypnosis". Snow hypnosis occurs when a driver is traveling directly into heavy snow and begins to focus on the falling

snow instead of the road ahead. This can cause a hypnotic-like effect on the driver. The danger of snow hypnosis is especially prevalent at night.
- In extreme conditions, chains may be necessary.

Ice

Drivers will receive training in fundamental safety procedures for driving on icy roads. All SEI Solutions drivers need to be aware of changes in road surface conditions that may affect the vehicle's traction. To help our drivers, SEI Solutions has developed the following procedures for driving on icy roads for this defensive driving policy:

- As with all extreme weather conditions, if you must continue, the safest techniques to employ are to reduce speed and increase your following distance. But of these two, increasing following distance is by far the most important. Depending on the temperature and road conditions, stopping distance (distance needed to come to a complete stop) on icy roads can increase four to ten times versus stopping from the same speed on a dry road.
- SEI Solutions drivers will be educated on the dangers of "black ice". Black ice forms when temperatures drop rapidly and any moisture on the road surface freezes into a smooth, almost transparent layer of ice. What makes black ice particularly dangerous is that you may not realize you are on it until it's too late. Determining the correct speed and safe following distance will be left to your best judgment.
- Bridges and overpasses are other areas to which you should give special attention. Ice will tend to form first on bridges and overpasses because cold air circulates both above and below these structures causing the temperature to drop more rapidly than on normal roads. Any moisture on the road surface of a bridge or overpass will freeze quicker and harder than elsewhere on the road. Extreme caution and a reduction in speed should be used by all SEI Solutions drivers while traveling over bridges and overpasses.

Night Driving

Drivers will receive training in fundamental safe driving techniques for driving at night. All SEI Solutions drivers need to be aware of the potential hazards driving at night present. These hazards include fatigue, reduced visibility, poor lighting, other (impaired) motorists, and animals on the road. To help our drivers better prepare for driving at night, SEI Solutions has developed the following procedures for this defensive driving policy:

- Fatigue is perhaps the most dangerous hazard of driving at night. Nothing we do at SEI Solutions is worth any one getting hurt. Fatigue usually sets in at night, but a tired driver, at any time of day, is an unsafe driver. Fatigue reduces drivers' reaction time and perception. All drivers are to review the following fatigue warning signs:
    a. Your eyes close or go out of focus by themselves.
    b. You can't stop yawning.
    c. You are experiencing trouble keeping your head up.
    d. You experience short-term memory loss. For example, you can't remember the last several miles you have driven.
    e. Your thoughts wander or you begin to daydream.
    f. You start drifting into other lanes of traffic, tailgate, or miss traffic signs.
    g. You experience an inability to maintain a constant rate of speed.
    h. You must jerk the steering wheel hard to correct a drift and get back into your lane.

If you experience any of these signs, it's time to get off the road as soon and as safely possible and get some rest.

- Reduced visibility is a hazard of driving at night. At night, visual acuity (degree of perception) and peripheral vision (side vision) are reduced, and the eyes may have difficulty adjusting from light to darkness. These factors all contribute to reduced visibility while driving at night. The best and safest techniques to counteract these night driving hazards are to reduce your speed and increase your following distance. Reducing speed is also the best way to prevent "out driving" your headlights.
- Poor lighting on the open highway or on rural roads is another hazard SEI Solutions drivers should be made aware of. At night, with poor or no lighting aside from the vehicle's headlights, hazards in the road are much more difficult to see and avoid. You should reduce speed and use extra caution when traveling on poorly lit or unfamiliar roads.
- Impaired motorists (drunk drivers) are a hazard to everyone on the road. SEI Solutions drivers should be especially cautious when driving between the hours of midnight and 3:00 am (typical bar and tavern-closing times). Drivers should be wary of motorists driving in an erratic manner including weaving in and out of traffic lanes, having difficulty maintaining a constant rate of speed, or braking suddenly. If you, as a driver, suspect that you are sharing the road with an impaired motorist, reduce your speed, let the motorist pass, and increase following distance.
- Animals on the road present another kind of hazard while driving at night. SEI Solutions drivers are to be especially alert when driving on roadways lined by woods or tall grass. Animals, especially deer, can jump out in front of an oncoming vehicle with little or no warning. The best techniques to avoid collisions with animals are to not "outdrive" your headlights and to reduce speed. If a collision with an animal is unavoidable, you should drive "through" the animal. This will help prevent a jackknife or rollover type accident.

Road Construction

SEI Solutions realizes that chances are good that from time to time our drivers will be faced with having to drive on roadways that are being repaired or under construction. Road construction presents several hazards. Because of this, our drivers are expected to approach road construction work zones the same way they would any adverse driving situation and follow these procedures:

- You should reduce speed and maintain a safe following distance.
- You should drive at or under all special or reduced posted speed limits while traveling through road construction work zones. Safe following distance will be left to your best judgment.
- You should be constantly aware of your immediate surroundings, anticipate the possible actions of other motorists, and expect sudden stops.
- You should watch for construction workers or vehicles crossing the roadway.
- You should use the lane furthest from a construction zone when possible.
- You should avoid sudden lane changes and use headlights and four-way flashers when traveling through construction zones.

Road Hazards

SEI Solutions drivers should be aware of the potential danger of encountering various types of road hazards including:

- Soft shoulders or severe pavement drop-offs that can cause rollover type accidents.
- Road debris such as tire recaps, metal, or lumber can cause severe damage to tires, tire rims, electrical systems, and brake lines. You should be aware of the road ahead to identify potential road debris early and take safe and appropriate avoidance maneuvers.

Underpasses

Hitting a bridge, underpass, or viaduct is a danger you should be constantly aware of. This type of accident, often referred to as "topping" a trailer, is always preventable. SEI Solutions drivers need to be aware that the posted height of an underpass is not always accurate. Re-paving and packed snow can reduce the clearance of an overpass enough to cause a problem. In addition, an empty trailer will ride higher than when it is loaded. You should make thorough trip plans. When in doubt of the clearance of an underpass, you should get out of your vehicle and make a visual inspection or find an alternate route.

Fixed Objects and Special Intersections
A good defensive driver will observe items in the area around the vehicle that might cause problems. Checking to be certain there is adequate clearance is the primary thing to watch. In the areas of driveways, alleyways, or plant entrances, the effective defensive driver will analyze the situation carefully, slow down, sound a warning when appropriate, and be ready to yield to the other driver involved.

Physical and Mental Condition
The company expects its drivers to manage their physical and mental condition well. That especially means keeping a positive attitude when behind the wheel, and taking good care of their physical health. Fatigue is an especially dangerous factor to be aware of.

Personal Appearance
If there is a company dress code, follow it carefully. Wear uniforms if provided. Be certain they are clean and pressed. Personal cleanliness is also important.

Following Distance
Tailgating is probably the single most common complaint lodged by the general driving public against truck drivers. Here are some specific following distance guidelines:

- use a 3-second interval at speeds up to 40 mph;
- use a 4-second interval at any speed over 44 mph;
- add extra time in bad weather or poor road conditions; and
- add extra following distance if you are being tailgated.

Driving Speed
You should drive consistent with posted speed limits, with due regard given to existing traffic, weather, and highway conditions. Never overdrive your headlights at night. That means you should be able to stop safely in the distance you can see clearly in your headlights.

Right of Way
As a defensive driver, you should never attempt to exercise the right of way principle. Let the other driver go first. Keep to the right except to pass, or when getting into position to turn left. In town, when you enter a main thoroughfare from a side street, alley, driveway, or a highway ramp, make a full stop at any crosswalk, then another full stop before actually moving into traffic.

Meeting Other Vehicles
Keep to the right when meeting other vehicles on a roadway. If a vehicle approaches on your side of the road, slow down and pull to the right as far as you safely can. If you have to take this kind of evasive action, and have actually gone off the highway onto the shoulder, be certain you slow the

vehicle down sufficiently before you attempt to come back onto the highway. Never pull to the left to avoid an oncoming vehicle.

When merging onto a highway SEI Solutions drivers are expected to:

- Signal early,
- Be patient and watch for an opening,
- Build speed and merge smoothly, and
- Check mirrors constantly.

When exiting a highway, SEI Solutions drivers are expected to:

- Signal and change into the right-hand lane early and safely;
- Signal intentions to exit early;
- Check mirrors constantly;
- Reduce speed and exit.

Curves and Turns

The biggest thing to remember in successfully negotiating curves and turns is to slow down. That way you will be able to make any needed adjustments in steering, etc. as required.

4.3
Company Policy for Forklifts (Powered Industrial Trucks)

1.0 PURPOSE

This program for the prevention of employee accidents/injuries while operating industrial trucks (forklifts) has been adopted by SEI Solutions, LLC. from the following OSHA regulations:

1910.178 – **Powered Industrial Trucks**

1926.20 – **General Safety and Health Provisions**

This program applies to all employees, permanent or temporary, who are required to operate material-handling equipment, including forklifts, reach trucks, order pickers and powered pallet jacks.

2.0 POLICY

It is the policy of SEI Solutions employees that have been trained and certified to operate forklifts and other powered industrial trucks. Employees must be trained and certified to operate each specific unit they will be required to operate.

3.0 PERSONAL PROTECTIVE EQUIPMENT

3.1 **Administration and Safety Division** shall be responsible for:

3.1.1 Developing a forklift policy and revising it as needed.

3.1.2 Ensure that training is provided to all forklift operators.

3.1.3 Maintain training records and issue certifications to approved forklift operators.

3.1.4 Approve trainer that has the knowledge, ability and experience to carry out the classroom and hands-on training.

3.1.5 Provide technical support to departments and employees when questions arise with regards to forklift safety.

3.1.6 Ensure that inspection occurs, that maintenance occurs on a scheduled frequency and that associated repairs are made.

3.2 **Powered Industrial Truck Operators** are responsible for the following:

3.2.1 Operating all powered industrial trucks in a safe manner consistent with the safe rules of operation.

3.2.2 Inspecting powered industrial trucks at the beginning of each work shift and completing the appropriate inspection forms.

3.2.3 Reporting all equipment malfunctions and/or maintenance needs to their supervisors immediately. Park lifts in safe place, remove key, tag or not problem.

4.0 TRAINING

4.1 SEI Solutions LLC., will ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely as demonstrated by the successful completion of our training and evaluation as specified below:

4.1.1 Only trained and certified operators, including supervisors, are allowed to operate powered industrial trucks (forklifts). SEI Solution LLC will certify all authorized employees regarding competency on each type of equipment that may be utilized.

4.1.2 The Safety Director is designated as the company administrator for training of forklift operators for SEI Solutions and will ensure that all trainers are knowledgeable experienced and capable of operator competency evaluations the written training program will include lecture discussion written material and hands on training and evaluations.

4.1.3 Formal instruction includes lecture discussion, interactive computer learning videos and written materials. Practical training involves instructor demonstrations and training exercises. Operator evaluation-critiques will be conducted. Training program content will include, but not be limited to the following prescribed topics:

4.2 Training Truck-related topics:

4.2.1 Operating instructions, warning, and precaution for the types of truck the operator will be authorized to operate.

4.2.2 Differences between the truck and the automobile.

4.2.3 Truck controls and instrumentation: where they are located, what they do, and how they work.

4.2.4 Engine or motor operation.

4.2.5 Steering and maneuvering.

4.2.6 Visibility (including restriction due to loading)

4.2.7 Fork and attachment adaptation, operation, and use limitation.

4.2.8 Vehicle capacity.

4.2.9 Vehicle stability.

4.2.10 Any vehicle inspection and maintenance that the operator will be required to perform.

4.2.11 Refueling and/or charging/recharging of batteries.

4.2.12 Operating limitation.

4.2.13 Any other operating instruction, warnings, or precautions listed in the operator's manual for the types of vehicles that the employee is being trained to operate.

4.3 Training – workplace-related topics:

4.3.1 Surface conditions where the vehicle will be operated.

4.3.2 Composition of loads to be carried and load stability.

4.3.3 Load manipulation, stacking, and unstacking.

4.3.4 Pedestrian traffic in areas where the vehicle will be operated.

4.3.5 Narrow aisles and other restricted places where the vehicle will be operated.

4.3.6 Hazardous (classified) locations where the vehicle will be operated.

4.3.7 Ramps and other sloped surfaces could affect the vehicles stability.

4.3.8 Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.

4.3.9 Other unique or potentially hazardous environmental conditions in the workplace that could affect safety operation.

4.3.10 Refresher training in relevant topics will e required for operators when:

4.3.10.1 The operator has been observed to operate the vehicle in an unsafe manner.

4.3.10.2 The operator has been involved in an accident or near-miss incident.

4.3.10.3 The operator has received an evaluation that reveals that the operator is not operating the truck safely.

4.3.10.4 The operator is assigned to drive a different type of truck.

4.3.10.5 Conditions in the workplace change in a manner that could affect safe operation of the truck.

4.3.11 Forklift operators at SEI Solutions LLC., are required to be evaluated and recertified every three (3) years.

4.3.12 Forklift operators are required to do an inspection of the equipment to be operated and the condition of the workplace environment in which the forklift will be operated prior to operation of the vehicle.

4.3.13 Operators will verify trailer chocks, supports, and dock plates prior to loading or unloading. The condition and security of dock plates and boarding ramps bust be inspected prior to use.

4.3.14 The brakes of highway trucks must be set, and wheel chocks placed under the rear wheels by the operator to prevent the trucks from rolling while they are boarded with forklifts.

HAZWOPER (Hazardous Waste Operations), RCRA, & Emergency Response Programs

Administrative Duties

SEI Solutions has developed this program to clean up and/or properly handle hazardous wastes, because they can pose significant safety and health risks to our workers and those of our subcontractors, when not handled properly.

General

HAZWOPER is a complicated regulation, with many different elements required. At SEI Solutions we have done a thorough job of complying with the many aspects of HAZWOPER.

Because we have employees who have the potential for responding to chemical spills at various facilities, our employees will understand and follow the host facilities detailed Emergency Response Plan.

Any worker who has exposure or the potential for exposure will be subject to our Medical Surveillance Program, under HAZWOPER at no cost to them.

Because employees use a variety of types of PPE and/or respiratory equipment, in their day-to-day operations, or in the event of a chemical spill, the PPE and/or Respiratory Protection plans will be followed.

The Safety Manager is in charge of the HAZWOPER safety and health programs.

Employee Protection

Engineering controls, work practices, and personal protective equipment for employee protection. Engineering controls, work practices, personal protective equipment, or a combination of these shall be implemented in accordance with this paragraph to protect employees from exposure to hazardous substances and safety and health hazards.

Engineering controls and work practices shall be instituted to reduce and maintain employee exposure to or below the permissible exposure limits, except to the extent that such controls and practices are not feasible.

Engineering controls which may be feasible include the use of pressurized cabs or control booths on equipment, and/or the use of remotely operated material handling equipment. Work practices which may be feasible are removing all non-essential employees from potential exposure during opening of drums, wetting down dusty operations and locating employees upwind of possible hazards.

Whenever engineering controls and work practices are not feasible, or not required, any reasonable combination of engineering controls, work practices and PPE shall be used to reduce and maintain to or below the permissible exposure limits or dose limits.

The employer shall not implement a schedule of employee rotation as a means of compliance with permissible exposure limits or dose limits except when there is no other feasible way of complying with the airborne or dermal dose limits for ionizing radiation.

Decontamination

Decontamination procedures are communicated to employees and implemented before any employees or equipment may enter areas on site where potential for exposure to hazardous substances exists. Standard operating procedures are developed to minimize employee contact with hazardous substances or with equipment that has contacted hazardous substances.

All employees leaving a contaminated area are appropriately decontaminated; all contaminated clothing and equipment leaving a contaminated area is appropriately disposed of or decontaminated. Where the decontamination procedure indicates a need for regular showers and change rooms outside of a contaminated area, they shall be provided and meet the requirements of 29 CFR 1910.141. Unauthorized employees shall not remove protective clothing or equipment from change rooms.

Decontamination procedures shall be monitored by the site safety and health supervisor to determine their effectiveness. When such procedures are found to be ineffective, appropriate steps shall be taken to correct any deficiencies.

Medical Surveillance

The program is provided at no cost to the employees. All employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year will be provided medical surveillance.

Location

Decontamination is performed in geographical areas that will minimize the exposure of uncontaminated employees or equipment to contaminated employees or equipment.

Equipment and Solvents

All equipment and solvents used for decontamination is decontaminated or disposed of properly.

Personal Protective Clothing and Equipment

Protective clothing and equipment is decontaminated, cleaned, laundered, maintained or replaced as needed to maintain their effectiveness.

Employees whose non-impermeable clothing becomes wetted with hazardous substances will immediately remove that clothing and proceed to shower. The clothing shall be disposed of or decontaminated before it is removed from the work zone.

Unauthorized employees. Unauthorized employees will not remove protective clothing or equipment from change rooms.

Commercial Laundries or Cleaning Establishments

Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment will be informed of the potentially harmful effects of exposures to hazardous substances.

Showers and Change Rooms

Where the decontamination procedure indicates a need for regular showers and change rooms outside of a contaminated area, they will be provided and meet the requirements of 29 CFR 1910.141. If temperature conditions prevent the effective use of water, then other effective means for cleansing shall be provided and used.

Site Control

Appropriate site control procedures will be implemented to control employee exposure to hazardous substances before clean-up work begins.

A site control program for protecting employees which is part of the Company's site safety and health program will be developed during the planning stages of a hazardous waste clean-up operation and modified as necessary as new information becomes available.

The site control program shall, as a minimum, include:

- A site map;
- Site work zones;
- The use of a "buddy system";
- Site communications including alerting means for emergencies;
- The standard operating procedures or safe work practices; and,
- Identification of the nearest medical assistance.

HAZWOPER Training Program

As part of the HAZWOPER program, our company has developed and implemented a program to inform workers (including contractors and subcontractors) performing hazardous waste or emergency response operations of the level and degree of exposure they are likely to encounter.

This company has also implemented procedures for introducing effective new technologies that provide improved worker protection in hazardous waste operations and spill/leak cleanup. Examples include PPE, foams, absorbents, adsorbents, neutralizers, etc.

Training makes workers aware of the potential hazards they may encounter and provides the necessary knowledge and skills to perform their work with minimal risk to their safety and health. Anyone performing the training will have the training and/or academic credentials and instructional experience to demonstrate competency.

Both supervisors and workers are trained to:

- Recognize hazards and to prevent them;
- Select, care for, and use respirators properly as well as other types of personal protective equipment;
- Understand engineering controls and their use;
- Use proper decontamination procedures;
- Understand the Emergency Response Plan, medical surveillance requirements, confined space entry procedures, spill containment program, and any appropriate work practices.
- Workers also must know the names of personnel and their alternatives responsible for site safety and health.

The amount of instruction differs with the nature of the work operations. Employees must not perform any hazardous waste or emergency response operation unless they have been trained to the level required by their job function and responsibility and have been certified by their instructor as having completed the necessary training. All emergency responders must receive refresher training sufficient to maintain or demonstrate competency annually. Employee training requirements are further defined by the nature of the work (e.g., temporary emergency response personnel, firefighters, safety officers, HAZMAT personnel, incident commanders, etc.)

At our facility the safety manager is the person responsible for conducting training. We make a determination as to who to train by using the following criteria:

- All employees working on site (such as but not limited to equipment operators, general laborers and others) exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management
  responsible for the site shall receive training before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards, and they shall receive review training.

- Employees are not permitted to participate in or supervise field activities until they have been trained to a level required by their job function and responsibility.

We want to offer the best training for our workers, so the format of the program that is used is audiovisual, classroom instruction, and practical (hands-on) instruction.

The training will thoroughly cover the following:

- Names of personnel and alternates responsible for site safety and health;

- Safety, health and other hazards present on the site;

- Use of personal protective equipment;

- Work practices by which the employee can minimize risks from hazards;

- Safe use of engineering controls and equipment on the site;

- Medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards; and

The procedure to train new employees at the time of their initial assignment is:

- General site workers (such as equipment operators, general laborers and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards shall receive a minimum of 40 hours of instruction off the site, and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

- Workers on site only occasionally for a specific limited task (such as, but not limited to, ground water monitoring, land surveying, or geophysical surveying) and who are unlikely to be exposed over permissible exposure limits and published exposure limits shall receive a minimum of 24 hours of instruction off the site, and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

- Workers regularly on site who work in areas which have been monitored and fully characterized indicating that exposures are under permissible exposure limits and published exposure limits where respirators are not necessary, and the characterization indicates that there are no health hazards or the possibility of an emergency developing, shall receive a minimum of 24 hours of instruction off the site and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

- Workers with 24 hours of training and who become general site workers or who are required to wear respirators, shall have the additional 16 hours and two days of training.

Management and Supervisor Training

On-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall receive 40 hours initial training, and three days of supervised field experience (the training may be reduced to 24 hours and one day if the only area of their responsibility is employees covered by paragraphs (e)(3)(ii) and (e)(3)(iii)) of OSHA 1910.120 and at least eight additional hours of specialized training at the time of job assignment on such topics as, but not limited to, the Company's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques.. Tracking the training and retraining will be accomplished by Lance Hodge.

Certificates signed by employees are handed out upon completion of their training.
All employees working on hazardous waste sites will be trained to the level required by their job function and responsibility prior to performing any hazardous waste operation.

All emergency responders have received refresher training sufficient to maintain or demonstrate competency annually.

We provide for pre-entry briefing to be held prior to initiating any site activity, and at such other times as necessary to ensure that employees are apprised of the site safety and health plan.

We ascertain that this plan is being followed by Routine Inspections. If a problem with the plan being followed is identified the employees involved will receive additional training.

Organizational Structure

The safety manager is the general supervisor who has the responsibility and authority to direct all hazardous waste operations.

The safety manager is the site safety and health supervisor who has the responsibility and authority to develop and implement the site safety and health plan and verify compliance.

Other personnel who are needed for hazardous waste site operations and emergency response are

- A project supervisor who has the responsibility and authority to direct all hazardous waste operations.

- A site safety and health supervisor who has the responsibility and authority to develop and implement the site safety and health plan and verify compliance.

All other personnel needed for hazardous waste site operations and emergency response.

- Incident Commander
- Safety Officer
- Operations Manager
- Scribe
- Public Information Officer
- Security
- Medical
- Decon (decontamination)
- First Responders
- Support Personnel

Our organizational structure is reviewed and updated as necessary to reflect the current status of waste site operations.

Site-Specific Safety and Health Plan

Our site-specific safety and health plan is a program that aids in eliminating or effectively controlling anticipated safety and health hazards. The site safety and health plan identifies the hazards of each phase of the specific site operation and is kept on the work site. The site safety and health plan addresses the safety and health hazards of each phase of site operation and includes the requirements and procedures for employee protection.

We have a safety and health risk or hazard analysis for each site task and operation identified in the work plan.

Personal protective equipment is used by employees for some of the site tasks and operations being conducted. See our Personal Protective Equipment Program for details.

Air Monitoring

Air monitoring shall be used to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site.

Initial Entry

Upon initial entry, representative air monitoring shall be conducted to identify any IDLH condition, exposure over permissible exposure
limits or published exposure levels, exposure over a radioactive material's dose limits or other dangerous condition such as the presence of flammable atmospheres or oxygen-deficient environments.

Periodic Monitoring

Periodic monitoring shall be conducted when the possibility of an IDLH condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows:

- **When work begins on a different portion of the site.**
- **When contaminants other than those previously identified are being handled.**
- **When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling).**
- **When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon).**

Personnel Monitoring

Monitoring of high-risk employees. After the actual clean-up phase of any hazardous waste operation commences; for example, when soil, surface water or containers are moved or disturbed; the Company shall monitor those employees likely to have the highest exposures to hazardous substances and health hazards likely to be present above permissible exposure limits or published exposure levels by using personal sampling frequently enough to characterize employee exposures. If the employees likely to have the highest exposure are over permissible exposure limits or published exposure limits, then monitoring shall continue to determine all employees likely to be above those limits. The Company may utilize a representative sampling approach by documenting that the employees and chemicals chosen for monitoring are based on the criteria stated above.

We have confined space situations at some sites. Therefore, we have established confined space entry procedures. See our Confined Space Entry Program for details.

Our spill containment program is as follows:

SEI Solutions will respond to nearly every type of chemical release or spill with the exception of radiation or explosives.

1. All personnel are made fully aware of the hazards they will be encountering.

2. Acid or Caustic Spills:

    a. Dawn appropriate and required PPE.
    b. Contain with acid absorbent.
    c. Begin fluid removal with an acid/base diaphragm pump. Material is pumped into DOT approved plastic drums.
    d. Leaking drums are placed in a clean poly overpack.
    e. All contaminated material is disposed of as either special waste or hazardous waste depending on its substance and profile.

3. Fuel Spills:

    a. Dawn appropriate and required PPE.
    b. Containerize with earthen berms, absorbent booms, or hard booms depending on whether the spill was on water or soil.
    c. Remove free product and over-excavate if necessary.
    f. All contaminated soil is disposed of as special waste and water at POTW or TSD.

- NOTE: if the spill is of fair size (over 500 gallons of fuel, or more that a drum of hazardous material spilled) we will mobilize our Hazmat Trailer for supplies and use as a command post.

The work plan is kept Safety Manager's Office and Site Trailer. We conduct inspections to detect deficiencies in the site safety and health plan. Inspections are conducted by the site safety and health supervisor or, in the absence of that individual, another individual who is knowledgeable in occupational safety and health, acting on behalf of the Company as necessary to determine the effectiveness of the site safety and health plan. Any deficiencies in the effectiveness of the site safety and health plan shall be corrected.

Emergency Response

This section covers all employees engaged in emergency response no matter where it occurs. Any SEI Solutions employees who engage in Emergency Response will follow this program.

(1) Emergency response plan. An emergency response plan shall be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations. The plan shall be in writing and available for inspection and copying by employees, their representatives and OSHA personnel.
The Company will evacuate their employees from the danger area when an emergency occurs, and who do not permit any of their employees to assist in handling the emergency, are exempt from the requirements of this paragraph if they provide an emergency action plan in accordance with §1910.38(a) of this part.

(2) Elements of an emergency response plan. The Company shall develop an emergency response plan for emergencies which shall address, as a minimum, the following to the extent that they are not addressed elsewhere:

(i) Pre-emergency planning and coordination with outside parties.

(ii) Personnel roles, lines of authority, training, and communication.

(iii) Emergency recognition and prevention.

(iv) Safe distances and places of refuge.

(v) Site security and control.

(vi) Evacuation routes and procedures.

(vii) Decontamination.

(viii) Emergency medical treatment and first aid.

(ix) Emergency alerting and response procedures.

(x) Critique of response and follow up.

(xi) PPE and emergency equipment.

(xii) Emergency response organizations may use the local emergency response plan or the state emergency response plan or both, as part of their emergency response plan to avoid duplication. Those items of the emergency response plan that are being properly addressed by the SARA Title III plans may be substituted into their emergency plan or otherwise kept together for the Company and employee's use.

(3) Procedures for handling emergency response.

(i) The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS). All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each Company.

Note to (q)(3)(i): The "senior official" at an emergency response is the most senior official on the site who has the responsibility for controlling the operations at the site. Initially it is the senior officer on the first-due piece of responding emergency apparatus to arrive on the incident scene. As more senior officers arrive (i.e., battalion chief, fire chief, state law enforcement official, site coordinator, etc.) the position is passed up the line of authority which has been previously established.

(ii) The individual in charge of the ICS shall identify, to the extent possible, all hazardous substances or conditions present and shall address as appropriate site analysis, use of engineering controls, maximum exposure limits, hazardous substance handling procedures, and use of any new technologies.

(iii) Based on the hazardous substances and/or conditions present, the individual in charge of the ICS shall implement appropriate emergency operations, and assure that the personal protective equipment worn is

appropriate for the hazards to be encountered. However, personal protective equipment shall meet, at a minimum, the criteria contained in 29 CFR 1910.156(e) when worn while performing fire fighting operations beyond the incipient stage for any incident.

(iv) Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear positive pressure self-contained breathing apparatus while engaged in emergency response, until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

(v) The individual in charge of the ICS shall limit the number of emergency response personnel at the emergency site, in those areas of potential or actual exposure to incident or site hazards, to those who are actively performing emergency operations. However, operations in hazardous areas shall be performed using the buddy system in groups of two or more.

(vi) Back-up personnel shall stand by with equipment ready to provide assistance or rescue. Advance first aid support personnel, as a minimum, shall also stand by with medical equipment and transportation capability.

(vii) The individual in charge of the ICS shall designate a safety official, who is knowledgeable in the operations being implemented at the emergency response site, with specific responsibility to identify and evaluate hazards and to provide direction with respectto the safety of operations for the emergency at hand.

(viii) When activities are judged by the safety official to be an IDLH condition and/or to involve an imminent danger condition, the safety official shall have the authority to alter, suspend, or terminate those activities. The safety official shall immediately inform the individual in charge of the ICS of any actions needed to be taken to correct these hazards at the emergency scene.

(ix) After emergency operations have terminated, the individual in charge of the ICS shall implement appropriate decontamination procedures.

(x) When deemed necessary for meeting the tasks at hand, approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet U.S. Department of Transportation and National Institute for Occupational Safety and Health criteria.

(4) Skilled support personnel. Personnel, not necessarily the Company's own employees, who are skilled in the operation of certain equipment, such as mechanized earth moving or digging equipment or crane and hoisting equipment, and who are needed temporarily to perform immediate emergency support work that cannot reasonably be performed in a timely fashion by the Company's own employees, and who will be or may be exposed to the hazards at an emergency response scene, are not required to meet the training required in this paragraph for the Company's regular employees. However, these personnel shall be given an initial briefing at the site prior to their participation in any emergency response. The initial briefing shall include instruction in the wearing of appropriate personal protective equipment, what chemical hazards are involved, and what duties are to be performed. All other appropriate safety and health precautions provided to the Company's own employees shall be used to assure the safety and health of these personnel.

(5) Specialist employees. Employees who, in the course of their regular job duties, work with and. are trained in the hazards of specific hazardous substances, and who will be called upon to provide technical advice or assistance at a hazardous substance release incident to the individual in charge, shall receive training or demonstrate competency in the area of their specialization annually.

(6) Training. Training shall be based on the duties and function to be performed by each responder of an emergency response organization. The skill and knowledge levels required for all new responders, those hired after the effective date of this standard, shall be conveyed to them through training before they are permitted to take part in actual emergency operations on an incident. Employees who participate, or are expected to participate, in emergency response, shall be given training in accordance with the following paragraphs:

(i) First responder awareness level. First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release. First responders at the awareness level shall have sufficient training or have had sufficient experience to objectively demonstrate competency in the following areas:

(A) An understanding of what hazardous substances are, and the risks associated with them in an incident.

(A) An understanding of the potential outcomes associated with an emergency created when hazardous substances are present.

(C) The ability to recognize the presence of hazardous substances in an emergency.

(D) The ability to identify the hazardous substances, if possible.

(E) An understanding of the role of the first responder awareness individual in the Company's emergency response plan including site security and control and the U.S. Department of Transportation's Emergency Response Guidebook.

(F) The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

(i) First responder operations level. First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release.
Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at the operational level shall have received at least eight hours of training or
have had sufficient experience to objectively demonstrate competency in the following areas in addition to those listed for the awareness
level and the Company shall so certify:

(A) Knowledge of the basic hazard and risk assessment techniques.

(B) Know how to select and use proper personal protective equipment provided to the first responder operational level.

(C) An understanding of basic hazardous materials terms.

(D) Know how to perform basic control, containment and/or confinement operations within the capabilities of the re-sources and personal protective equipment available with their unit.

(E) Know how to implement basic decontamination procedures.

(F) An understanding of the relevant standard operating procedures and termination procedures.

(iii) Hazardous materials technician. Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance. Hazardous materials technicians shall have
received at least 24 hours of training equal to the first responder operations level and in addition have competency in the following
areas and the Company shall so certify:

(A) Know how to implement the Company's emergency response plan.
(B) Know the classification, identification and verification of known and unknown materials by using field survey instruments and equipment.
(C) Be able to function within an assigned role in the Incident Command System.
(D) Know how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician.
(E) Understand hazard and risk assessment techniques.
(F) Be able to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit.
(G) Understand and implement decontamination procedures.
(H) Understand and termination procedures.
(I) Understand basic chemical and toxicological terminology and behavior.

(iv) Hazardous materials specialist. Hazardous materials specialists are individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician, however, those duties require a more directed or specific knowledge of the various substances they may be called upon
to contain. The hazardous materials specialist would also act as the site liaison with Federal, state, local and other government authorities in regards to site activities. Hazardous materials specialists shall have received at least 24 hours of training equal to the technician level and in addition have competency in the following areas and the Company shall so certify:

(A) Know how to implement the local emergency response plan.
(B) Understand classification, identification and verification of known and unknown materials by using advanced survey instruments and equipment.
(C) Know of the state emergency response plan.
(D) Be able to select and use proper specialized chemical personal protective equipment provided to the hazardous
materials specialist.
(E) Understand in-depth hazard and risk techniques.
(F) Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available.

(G) Be able to determine and implement decontamination procedures.
(H) Have the ability to develop a site safety and control plan.
(I) Understand chemical, radiological and toxicological terminology and behavior.

(v) On scene incident commander. Incident commanders, who will assume control of the incident scene beyond the first responder awareness level, shall receive at least 24 hours of training equal to the first responder operations level and in addition have competency in the following areas and the Company shall so certify:

(A) Know and be able to implement the Company's incident command system.
(B) Know how to implement the Company's emergency response plan.
(C) Know and understand the hazards and risks associated with employees working in chemical protective clothing.
(D) Know how to implement the local emergency response plan.
(E) Know of the state emergency response plan and of the Federal Regional Response Team.
(F) Know and understand the importance of decontamination procedures.

(7) Trainers. Trainers who teach any of the above training subjects shall have satisfactorily completed a training course for teaching the subjects they are expected to teach, such as the courses offered by the U.S. National Fire Academy, or they shall have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills and a good command of the subject matter of the courses they are to teach.

(8) Refresher training.

(i) Those employees who are trained in accordance with paragraph (q)(6) of this section shall receive annual refresher training of sufficient content and duration to maintain their competencies, or shall demonstrate competency in those areas at least yearly.

(ii) A statement shall be made of the training or competency, and if a statement of competency is made, the Company shall keep a record of the methodology used to demonstrate competency.

(9) Medical surveillance and consultation.

(i) Members of an organized and designated HAZMAT team and hazardous materials specialists shall receive a baseline physical examination and be provided with medical surveillance as required in paragraph (f) of this section.

(ii) Any emergency response employees who exhibits signs or symptoms which may have resulted from exposure to hazardous substances during the course of an emergency incident, either immediately or subsequently,
shall be provided with medical consultation as required in paragraph (f)(3)(ii) of this section.

(10) Chemical protective clothing. Chemical protective clothing and equipment to be used by organized and designated HAZMAT team members, or to be used by hazardous materials specialists, shall meet the requirements of paragraphs (g)(3) through (5) of this section.

(11) Post-emergency response operations. Upon completion of the emergency response, if it is determined that it is necessary to remove hazardous substances, health hazards, and materials contaminated with them (such as contaminated soil or other elements of the natural environment) from the site of the incident, the Company conducting the clean-up shall comply with one of the following:

(i) Meet all of the requirements of paragraphs (b) through (o) of this section; or

(ii) Where the clean-up is done on plant property using plant or workplace employees, such employees shall have completed the training requirements of the following: 29 CFR 1910.38(a); 1910.134; 1910.1200, and other appropriate safety and health training made necessary by the tasks that they are expected to be performed such as personal protective equipment and decontamination procedures. All equipment to be used in the performance of the clean-up work shall be in serviceable condition and shall have been
inspected prior to use.

(1)

Toxic Metals (Lead & Cadmium)

Program Purpose

SEI Solutions has recognized the need for protecting its employees from being exposed to Lead and Cadmium in the work place. This program shall apply to all employees who may have potential exposure to Lead or Cadmium at or above the action level for thirty days or more in a year. This program was written to assure that no employee is exposed to Lead and/or Cadmium at or above the (TWA) or concentrations greater than 50 micrograms per cubic meter of air (50 ug/m(3)) averaged over an eight-hour time period. When possible, all hazards should be engineered out of the work place environment prior to the use of Personnel Protective Equipment. Program must be provided for examination and copying upon request of affected employees, their representatives.

Training

SEI Solutions mandates that its employees will be informed of the Lead and Cadmium regulations put forth by OSHA. They will also be informed of this program. Training must be provided prior to initial assignment and at least annually thereafter.

All employees are required to attend training before being scheduled on any job-site, this will include a review of this program. All training shall be documented and filed in the employee's personnel file. Record shall include:

(1) Identity of employee trained,

(2) The signature of the person who conducted the training and

(3) Date of the training. Records must be kept 1 year.

A training refresher course will be conducted annually.

Project supervision will be responsible for informing employees of the operations which could result in exposure to Lead or Cadmium above the action level. They will also review this program on the jobsite prior to starting any work involving Lead or Cadmium. The following topics will be covered during the training of employees who may be exposed to Lead or Cadmium at or above the action level for thirty days or more per year:

- The OSHA regulations concerning Lead and Cadmium
- Engineering controls and procedures associated with the job to be done
- Make employees aware that chelating agents should not be used routinely to remove Lead and Cadmium from a person's body. They should also be aware that this should only be done by a licensed physician.
- The use of respirators including the purpose, selection, fitting, and limitations
- The medical surveillance program including its purposes. This will include adverse health effects caused by excessive exposure to Lead and Cadmium and the medical removal program.
- The operations which could result in exposure to Lead and Cadmium at or above the action level
- Employees' hands and faces should be washed if lead containing materials are contacted.
- Records of this training will show the name of the employee trained along with the date of the training and a signature of the instructor. Records will be kept on file for 12 months.
- The written program must be reviewed and updated annually or more often to reflect significant changes in employer's compliance status.

Jobsite engineering controls and procedures

To maintain compliance with our customers' jobsite engineering controls and procedures, the Project Supervisor will inform jobsite employees of the customer's requirements. This will be done through pre job safety meetings and orientations.
The Project Supervisor is responsible for obtaining a written plan which will include the documentation of air monitoring, the source of Lead or Cadmium and a description of each operation in which Lead, and Cadmium is emitted. This will be obtained from customer safety and operations personnel. The written plan will include an outline of equipment used, material used, material processed, and engineering controls in place. A documented, written plan for dealing with emergency situations involving a substantial release of cadmium shall be addressed in the program. Project Supervision will ensure that this information is communicated to jobsite workers prior to project assignment and stress safe work procedures associated with industrial service line.
The following will be provided: adequate ventilation, sinks, showers, and eyewash stations. Procedures will be in place to minimize exposure to lead or cadmium when employees are performing the maintenance of ventilation systems. Respirators will be used during the time period necessary to install or implement engineering or work practice controls, where engineering and work practice controls are insufficient and in emergencies. Procedures shall be developed and implemented to minimize employee exposure to cadmium when maintenance of ventilation systems and changing of filters. Where the PEL is exceeded, a written compliance

program shall be established and implemented to reduce employee exposure to or below the PEL by means of engineering and work practice controls.
If employees working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

Personnel Protective Equipment (PPE)

Personnel Protective Equipment (PPE) will not be a substituted for proper material handling and engineering controls. Coveralls or similar full-body work clothing, rubber gloves, hard hats, and steel toe boots or disposable boot coverlets and eye protection or other appropriate protective equipment should be worn on all jobsites. Workers will routinely wash and change clothing at the end of each work shift.
The Project Supervision will ensure that all PPE is utilized correctly by employees. SEI Solutions will furnish, at no cost to the employee, the appropriate PPE for the project.

Decontamination procedures

Project Supervision will coordinate with customer personnel for all phases of decontamination, which must be developed and implemented prior to the start of work. A decontamination procedure will be developed, communicated to workers and also implemented before any employees or equipment may enter areas of the site where the potential for exposure exists. Standard operating procedures (SOP's) will be developed to minimize employee contact with Lead and Cadmium.

Procedures that must be followed:

- Any employee leaving a contaminated area shall be properly decontaminated. All equipment or clothing leaving the contaminated area must be appropriately disposed of or decontaminated. The Project Supervisor will determine the effectiveness of the decontamination procedures and will make corrective actions when necessary.
- Any material or equipment used for the decontamination process will be decontaminated or disposed of properly.
- All Personnel Protective Equipment or Clothing will be decontaminated or replaced as needed to maintain its effectiveness.
- The decontamination process will be performed in geographical areas that will minimize the exposure of uncontaminated employees or equipment.
- If any employee's personnel clothing is contaminated, they will immediately be taken to shower, and the contaminated clothing will be properly disposed of.

- If the decontamination procedure shows a need for regular showers and change facilities outside of a contaminated area, and weather conditions prevent the use of water, then other effective methods for cleaning shall be used.

Hazardous Information

- Routes of entry for Lead or Cadmium are inhalation and ingestion.
- Only organic Lead is normally absorbed through the skin.
- Inhalation is the most common route of entry for lead into the body.
- Ingestion is a route of entry generally due to contained food or smoking.
- Acute exposure to Lead or Cadmium can cause encephalopathy.
- Chronic exposure can cause damage to nervous system, reproductive system, and kidney disease.

Surveillance Program

For employees who are or may be exposed to cadmium at or above the action level the following medical surveillance program shall apply. The measurement of Lead levels in the blood is the most useful indicator of Lead being absorbed by the body. A worker's blood lead levels (PhB) must be maintained below 30 micrograms per 100 grams of whole blood. Blood level measurements show the amount of lead in the blood stream, but do not give any indication about the amount of lead in organs.

Any employees who are or could be exposed to over 30 micrograms (30 pg) of Lead or Cadmium, for more than 30 days per year are required to be a part of the surveillance program. The medical examinations and procedures are to be performed by a licensed physician. A work area that is found to have exposure levels above the permissible limit over 30 days per year must document the implementation of engineering and work practice controls to reduce the employee's exposure. Using respirators is acceptable if engineering and work practice controls do not reduce the exposure to acceptable levels. If initial air monitoring is above the action level, monitoring is conducted every six months until two consecutive results are below the action level.

Every six months any employee who is required to participate in the Lead & Cadmium Protection Program-surveillance program, will receive blood sampling and analysis for Lead and Cadmium and Zinc protoporphyrin. The employee will receive blood sampling every 2 months when the levels are at or above 40 micrograms (40 pg) per 100 grams (100g) of blood sample. If any employee is removed from work activities because of elevated blood Lead and Cadmium levels, they must be checked at least monthly during the recovery period.

Employees will be notified in writing within five days after the receipt of biological monitoring results that exceed 40 micrograms (40pg) per 100 grams (100g) of blood sample. They will then be temporarily removed with Medical Removed Protection.

Annual Medical Examination

Contents of exam will include:

An examination of the medical and work history of the employee. A physical examination of the following: neurological system, routine urinalysis with microscopic examination, blood pressure, blood sample, blood analysis, cardiovascular system, kidneys, gastrointestinal system, blood cell forming process, teeth and gums, and any other test or exam the physician feels is necessary.

Medical examinations must take place:

For an employee who has breathing difficulty after being exposed to a Lead or Cadmium environment.

For an employee who has difficulty breathing during the use of a respirator.

For employees who may be exposed to or above the action level set for exposure of Lead and Cadmium an annual examination must take place by a licensed physician.

For employees who have had a blood Lead or Cadmium level sample at or above 40 micrograms per 100 grams of blood

For an initial reading prior to the first working in an area in which the concentration of Lead or Cadmium are above the action levels.

For an employee who has developed signs or symptoms associated with Lead or Cadmium intoxication.

Records

This procedure will be reviewed and updated at least annually
All records will be kept for either 40 years from the time a record was created or 20 years after the termination of employment, whichever is the longest period.
All affected employees, their representatives and the Assistant Secretary and the Director will have accesses to this procedure.

Medical Removal Protection Policy

Any employee who has been exposed to action level or elevated Lead or Cadmium levels and has a blood Lead and Cadmium level of 40 micrograms per 100 grams of blood will be removed from the work environment were the exposure has occurred. The employee will be reallocated to duties that have no exposure to Lead or Cadmium at or above the action level. If a physician recommends the employee be off of work for duration this will take place with full pay. The employee will not return to any jobsite where the Lead or Cadmium levels are at or above the action level until the employee receives at least 3 blood level tests that average at or below 40 micrograms of blood Lead and Cadmium per 100 grams of blood sample. The employee will have up to 18 months of medical removal benefits on each occasion that an employee is removed from exposure to Lead and Cadmium.

Procedures for Monitoring

Exposure monitoring for employees must be conducted for a full shift or at least 7 consecutive hours.
There will be at least one sample for each employee classification in each of the areas worked. These samples must be representative of employees who may be exposed to Lead or Cadmium. On a jobsite where Lead or Cadmium levels may be at or above action levels, initial air monitoring must be collected and read by a Safety Professional. This monitoring training must be documented. Affected employees shall be notified of the results of any monitoring performed within 15 working days, either individually in writing or by posting the results in an appropriate location that is accessible to affected employees. Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, in the written notice shall be included a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

Posting Signs

All work areas where employees could potentially be exposed to Lead or Cadmium above the PEL will have warning signs posted that read: Authorized personnel only, warning Lead or Cadmium Work Area, no smoking or eating. Examples of Lead or Cadmium containing

materials include but not limited to leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials.
Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials. Appropriate work practices must be followed to ensure the lead containing materials are not disturbed.

Hydrogen Sulfide (H_2S) Safety Program

Purpose:

SEI Solutions has recognized the potential for H2S exposure in some host facilities during industrial cleaning operations. If the presence of H2S is found, or the potential exists the company will establish Hydrogen Sulfide operational procedures through the use of this document. The Company shall evaluate the host employer facilities to determine if any work area meets the criteria for designation as a Hydrogen Sulfide Hazard Area.

Responsibility:

The Safety and Health Manager is responsible for all facets of this program and has full authority to make necessary decisions to ensure success of the program. The Safety and Health Manager is the authorized to amend these instructions and is authorized to halt any operation of the Company where there is danger of serious personal injury.

Background:

Hydrogen Sulfide exposure can be fatal, the result of asphyxiation. Hydrogen Sulfide affects primarily the respiratory system. Hydrogen Sulfide is also a highly flammable gas. Hydrogen sulfide presents a potential hazard to workers at the work site. It usually occurs as an unwanted by-product and can result in worker exposure in many different industries or occupations. To ensure protection against exposure to hydrogen sulfide, both workers and employers must be aware of its properties, how it affects the body and what to do in emergency situations. The Safety and Health Manager shall ensure that all personnel who will be working at the job site will be properly trained in H_2S awareness and contingency procedures.

Occurrence of Hydrogen Sulfide:

Hydrogen sulfide is produced by the putrefaction of organic matter and may accumulate in sewers, sewage treatment plants or hide storage pits in the tanning industry. Hydrogen sulfide may be used in the manufacture of inorganic sulfides, sulfuric acid and mercaptans.

Characteristics of Hydrogen Sulfide:

Hydrogen sulfide (H_2S) is a colorless gas with a powerful nauseating smell of rotten eggs. The odor is a poor warning property because hydrogen sulfide exposure quickly deadens the sense of smell. The gas is heavier than air and may collect in low areas such as sewers, pits, tunnels, or gullies. High airborne levels of hydrogen sulfide (between 4.3 and 46.0 percent of gas by volume in the air) may catch fire if there is a source of ignition. If the gas is burned, toxic products such as sulfur dioxide will be formed. Hydrogen sulfide is incompatible with oxidizing

agents, such as nitric acid and chlorine trifluoride, and may react violently or ignite spontaneously.

Health Effects on the Body:

Hydrogen sulfide is extremely toxic. It may cause death instantaneously in high airborne concentrations. Low levels may be extremely irritating to the lungs, nose, throat, and eyes. Hydrogen sulfide can be detected by smell at levels as low as 0.13 parts hydrogen sulfide per million parts air (ppm). Odor cannot be used as a warning because the gas can deaden the sense of smell within 2 to 15 minutes in exposures of approximately 100 ppm.

A single breath of hydrogen sulfide at about 1000 ppm may paralyze the respiratory system and result in coma and death. Convulsions may also occur. Prolonged exposure at about 250 ppm hydrogen sulfide may cause the lung tissue to swell and fill up with water (pulmonary edema). This effect may occur after the exposed worker recovers from the irritant effects of the gas. Exposures of 20 to 50 ppm hydrogen sulfide for one hour may cause inflammation of the cornea and the delicate lining of the eye and eyelid (a condition called keratoconjunctivitis). Exposures for long periods at 50 ppm may cause severe irritation of the nose, throat and lungs. Workers exposed to lower concentrations of hydrogen sulfide may develop headaches, eye disorders and chronic bronchitis.

Concentration Percent (%)	*PPM*	*Physical Effects*
1/1000 of 1%	10	Obvious unpleasant odor of rotten eggs
1/100 of 1%	100	Kills sense of smell in 2 to 10 minutes, eyes and throat will sting
5/100 of 1%	500	Dizziness; stops breathing, artificial respiration needed promptly
1/10 of 1%	1000	Becomes unconscious and death follows in minutes, artificial respiration needed promptly

Regulatory Standard:

- OSHA - 29 CFR 1910.119, Process Safety
- OSHA - 29 CFR 1910.146, Confined Spaces
- OSHA - 29 CFR 1910.1000, Air Contaminants

- OSHA - 29 CFR 1910.1200, Hazard Communication
- OSHA - 29 CFR 1910.132-138, Personal Protective Equipment

Related Programs:
The following safety programs are to be used in conjunction with this program:

- Process Safety Management Program.
- Confined Space Entry Program.
- Hazard Communication Program.
- Respiratory Protection Program.
- Personal Protective Equipment

Employer Responsibilities:
Workers may not be exposed to airborne levels of hydrogen sulfide which average more than 10 ppm* over an 8-hour workday. In addition, workers may not be exposed to airborne levels of hydrogen sulfide which average more than 15 ppm over any 15-minute period during the workday. At no time may the airborne level of hydrogen sulfide to which workers are exposed exceed 20 ppm. It is important to note that OELs (Occupational Exposure Limits) represent minimum standards for worker protection. All efforts should be taken to keep hydrogen sulfide levels as low as possible. It may be necessary, in some instances, to routinely monitor the air to ensure that airborne levels do not exceed the Occupational Exposure Limits.

To protect workers from the hazards of hydrogen sulfide, there are several control options available to the employer. These may include "engineering out" the hazard, putting safe work procedures in place or using administrative controls. Administrative controls involve such approaches as job rotation, work assignment or time periods away from hydrogen sulfide. The method(s) used will depend on the condition at the work site. If such measures are inadequate to protect workers, or in the event of an emergency, appropriate breathing apparatus providing positive pressure to the facepiece must be provided. Workers must also be trained in its use. The Respiratory Protection Program chapter shall be consulted and provides information on the selection, care and use of respiratory protective equipment.
Other personal protective equipment must also be provided if necessary. If personal protective equipment is used, it must be properly selected and cared for. At the minimum, a NIOSH-certified self-contained breathing apparatus or airline respirator with escape SCBA shall be used.

Worker Responsibilities:

Current regulations require the worker to take reasonable care of himself and others at the work site. This includes co-operating with the employer for the purpose of protecting himself and others. The worker must:

- become aware of the associated hazards and follow work practices and procedures developed by the employer.
- wear protective equipment supplied by the employer to ensure protection and follow instructions on correct usage.

In Case Of An Emergency

Workers and employers both have responsibilities in emergency situations.
The employer must:

- ensure all employees are aware of site-specific contingency/emergency plans.
- have emergency procedures developed in advance of any potential emergency involving hydrogen sulfide leaks.
- ensure that workers are aware of the procedures, are trained and are adequately supervised in an emergency.
- provide workers with appropriate breathing apparatus providing positive pressure to full facepieces.
- ensure that workers use other protective equipment necessary for use in an emergency.

The worker must:

- vacate the area immediately if a sensor alarm is activated and shall not reenter without proper respiratory protection.
- avoid breathing hydrogen sulfide while quickly leaving the area for fresh air.
- move an exposed person who has breathed large amounts of hydrogen sulfide to fresh air at once. If breathing has stopped, perform artificial respiration.
- notify someone else and put into effect the established emergency rescue procedures whenever an exposed person is overcome.
- not re-enter a hydrogen sulfide-filled area of unknown concentration unless equipped with full facepiece positive pressure breathing apparatus.
- be prepared to assist fellow workers, while making sure the correct emergency procedures are followed. It is important not to take unnecessary risks when rescuing or assisting a fellow worker.

Locations for Safe Areas

Prevailing wind data must be considered in locating safe areas. The safe areas should be located 200 feet or more from the workplace, so they offset prevailing winds perpendicularly. Personal protective gear should be kept upwind. Upon recognizing an emergency, all employees will assemble at the designated safe areas for instructions.

Requirements:

The requirements of this Program are the minimum acceptable standards with regard to H_2S operations. This Program also classifies violations as major or minor for purposes of meeting the assessment and penalty provisions of 43 CFR part 3163.

43 CFR part 3163 specifies the corrective action which may be required and established the normal abatement period following detection of a major or minor violation in which the violator may take such corrective action without incurring an assessment. The authorized officer may, after consideration of all appropriate factors, require corrective actions and abatement periods that in some cases, vary from those specified in this Program and that he/she determines to be necessary to protect public health and safety, or the environment.

Permit-Required Confined Space Program:

The Company will implement our confined space program when performing work in areas designated as a confined space. The permit-required confined space program will conform to the requirements of 29 CFR 1910.146. The Company shall:

- Implement the measures necessary to prevent unauthorized entry.
- Identify and evaluate the hazards of permit spaces before employees enter them.
- Pre-Entry requirements. Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:
- Specifying acceptable entry conditions.
- Isolating the permit space.
- Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
- Provide pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.

- Verify that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
- Develop and utilize checklists based on this standard practice instruction and 29 CFR 1910.146.

Equipment Requirements:
Provide the following equipment at no cost to employees, maintain that equipment properly, and ensure that employees are trained in the proper use of the equipment:

- Testing and monitoring equipment needed to determine if hazardous conditions exist or to verify that they do not exist.
- Ventilating equipment needed to obtain acceptable air quality entry conditions.
- Communications equipment necessary for communication between personnel involved in the entry operation.
- Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees.
- Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.
- Barriers and shields as required to protect workers from pedestrian, and vehicular traffic.
- Ladders needed for safe ingress and egress by authorized entrants.
- Rescue, Retrieval, and Emergency equipment needed to extract or treat injured personnel, except to the extent that the equipment and or service is provided by rescue services that are immediately available.
- Any other equipment necessary for safe entry into and rescue from permitted spaces at the facility.
- Principal equipment needed to conduct confined space operations. The below listed safety equipment will be maintained where required for confined space operations.

  - ☐ Multi-gas monitors
  - ☐ Ventilation equipment
  - ☐ Rescue tripod/davit arm and winch system
  - ☐ Body harnesses
  - ☐ Extraction cable and lanyards
  - ☐ Air compressors (as required)
  - ☐ Supplied air respirators (as required)
  - ☐ Air purifying respirators (as required)
  - ☐ SCBA equipment (as required)

- ☐ Emergency escape breathing apparatus (as required)
- ☐ Radio communication system (as required)
- ☐ Signage (as required)
- ☐ Lock-out/tag-out equipment (as required)
- ☐ Intrinsically safe lighting equipment
- ☐ Personal protective clothing
- ☐ Hearing protection equipment
- ☐ Head protection equipment

- (Continued) Principal equipment needed to conduct confined space operations. The below listed safety equipment will be maintained where required for confined space operations.

  - ☐ Eye protection equipment
  - ☐ First aid kits
  - ☐ Time keeping equipment
  - ☐ Hand tools
  - ☐ Escape ladders for depths of four feet or shoulder height

Procedures for Atmospheric Testing:

Atmospheric testing for Hydrogen Sulfide Hazard Areas is required for two distinct purposes: Evaluation of the hazards of the work area and verification that acceptable entry conditions for entry into that area exist.

Evaluation Testing:

This Company will ensure that the atmosphere is analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise. Evaluation and interpretation of these data, and development of the entry procedure, will be done by, or reviewed by, a qualified professional based on evaluation of all serious hazards. The internal atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

☐ Oxygen content (19.5% - 23.5%)	OSHA Mandated
☐ Flammable gases and vapors	OSHA Mandated
☐ Potential toxic air contaminants	OSHA Mandated
☐ Airborne combustible dusts	Site Specific

Verification Testing:
The atmosphere of a work area designated as a permit space which may contain a hazardous atmosphere will be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) will be recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition. The atmosphere will be verified, with a calibrated direct-reading instrument, for the following conditions in the order given:

- ☐ Oxygen content (19.5% - 23.5%) OSHA Mandated
- ☐ Flammable gases and vapors OSHA Mandated
- ☐ Potential toxic air contaminants OSHA Mandated
- ☐ Airborne combustible dusts Site Specific

Duration of Testing:
Measurement of values for each atmospheric parameter will be made for at least the minimum response time of the test instrument specified by the manufacturer.

H_2S Detection and Monitoring Equipment:
SEI Solutions will ensure H2S detection equipment is available for employees working in a potential H2S environment.
The lower level alarm to be set at 10 ppm. Upper level arm (if possible) will be set at 50 ppm. Should the alarm sound all personnel will immediately leave the area. No employee will enter any area suspected to contain H2S without proper respiratory equipment.
The detection system shall be installed, calibrated, tested, and maintained in accordance with the manufacturer's recommendations.

Testing Stratified Atmospheres:
When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope will be tested approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress will be slowed to accommodate the sampling speed and detector response. The stratified atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

- ☐ Oxygen content (19.5% - 23.5%) OSHA Mandated
- ☐ Flammable gases and vapors OSHA Mandated
- ☐ Potential toxic air contaminants OSHA Mandated
- ☐ Airborne combustible dusts Site Specific

Emergency First Aid Procedures:
In the event of an emergency, institute first aid procedures and send for first aid or medical assistance in accordance with local procedures.

Eye Exposure: Wash immediately with large amounts of water. Lifting the lower and upper lids occasionally, get medical attention as soon as possible.

Skin Exposure: Immediately flush with copious amounts of water. Remove any clothing contaminated, and flush exposed skin areas, get medical attention as soon as possible.

Respiratory Exposure: Get the victim to open, fresh air immediately. If breathing has stopped perform CPR. Keep the victim warm and at rest. Get medical attention as soon as possible.

Rescue Considerations. Don't become a second victim. Move the affected person from the hazardous area. If the exposed person has been overcome, initiate local emergency notification procedures. Understand the facility's emergency rescue procedures and know the locations of rescue equipment before the need arises.

Training:

At a minimum training shall provide coverage of the following points:

I. Explanation of the seriousness of H2S safety practices.
II. The importance of wind direction awareness and personnel movement in an upwind direction.
III. Mouth-to-mouth resuscitation and the following first aid procedures should an H2S emergency arise.
    1. Call an Ambulance or Medical Provider.
    2. Wear BREATHING equipment (not escape equipment) if rescuing a person in a suspected H2S contamination area.

3. Personnel overcome by H2S shall be moved immediately to an area of fresh air and mouth-to-mouth resuscitation administered if person is not breathing.
4. At the first opportunity, replace mouth–to– mouth efforts with resuscitation equipment.
5. Continue to administer oxygen when breathing resumes.
6. Treat for shock if necessary.

IV. Appropriate H2S detection tests will be made before personnel enter areas of suspected contamination. These tests shall be made after personnel have donned self-contained, pressure demand-breathing equipment.

V. Understanding that escape respirators are to be used for escape only.

VI. A head count will be taken immediately after entering location. Personnel must adopt the practice of watching out for each other when emergency conditions exist. Work must be performed in pairs. The "buddy system" will be used.

VII. Use, care and servicing of protective breathing equipment, H2S detection equipment and fire extinguishers.

VIII. Personnel shall never enter an enclosed area where H2S is suspected without wearing appropriate protective breathing gear. If the worker in an enclosed area is over an arm's length away, a life belt and lifeline shall be secured to him and the other end held by a responsible person stationed in a clear area. Employees must be trained in confined space entry prior to entering any confined space under 29CFR 1910.146

IX. After being in an area containing H2S, personnel should not remove breathing equipment until tests indicate the air is safe to breathe (10 ppm or less).

X. In the event of sudden gas release with no advanced warning, personnel shall take the following general actions:

1. Do Not Panic!
2. Hold breath (Do not breathe)
3. Put on protective breathing gear
4. Proceed to the designated safe area and report any person in distress. Secure instructions from supervisor.

Retraining:

Retraining shall be provided for all affected employees as a minimum under the following conditions:

Whenever there is a change in job assignments.

Whenever there is a change in personal protective equipment.

Whenever there is a change in equipment that presents a new hazard.

Whenever there is a change in processes that presents a new hazard.

Whenever their work takes them into hazardous areas.

Whenever there is a change in Hydrogen Sulfide safety procedures.

Whenever safety procedure fails resulting in a near-miss, illness, or injury.

Additional Retraining:
Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge of known hazards or use of equipment or procedures.

The retraining shall reestablish employee proficiency and introduce new equipment, or revised control methods and procedures, as necessary.

Certification:
This employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain a synopsis of the training conducted, each employee's name, and dates of training.

Protection from Hazards:

Working in an H2S or potentially contaminated H2S environment requires accurate planning for maximum protection of human lives.

Planning should include:

A. Contingency Plan
B. Diagnosis of the worksite
C. Adequate and proper placement of safety equipment
D. Personnel training program
E. Personnel drills
F. Supervisions responsibility
G. Knowledge of working conditions
H. Emergency procedures
I. Follow all safe work practices

Employees must be made aware of site-specific contingency plans and must have specific requirements of the plan fully explained prior to beginning work. Special emphasis shall be placed on evacuation procedures.

Safety Procedures

I. Two identified alternate escape routes.
II. Continuous atmosphere monitoring equipment is required along with an adequate audio/visual alarm warning system.
III. Ignition hazards must be eliminated, and No Smoking strictly enforced.
IV. Awareness training and drills are required.
V. H2S is heavier than air so avoiding low-lying areas is a must.
VI. Select a partner and use the "Buddy System" for mutual safety.
VII. Maintain and observe warning signs.
VIII. Post emergency numbers in a conspicuous place. Maintain reliable communications systems.
IX. Locate emergency stations a minimum of 250 feet or as far from the H2S source as practical. During an emergency, all personnel will assemble at the briefing stations for instructions and for refilling air bottles.
X. Continuous observation of wind indicators. During atmospheric contamination by H2S, travel up wind or crosswind from source, not downwind.
XI. Explosion proof mechanical ventilators reduce H2S exposure risk.

Variances from Requirements:

The Safety and Health Manager shall ensure that all personnel who will be working at the job site will be properly trained in H_2S awareness and contingency procedures.
The Safety and Health Manager may request the authorized officer to approve a variance from any of the requirements prescribed in this Program. All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related requirement(a) of minimum standard(s) are to be satisfied. The authorized officer, after consider in it all relevant factors, may approve the requested variance(s) if it is determined that the proposed alternative(s) meets or exceeds the objectives of the applicable requirement(s) or minimum standard(s).

Company Policy for Toxic and Hazardous Materials: Asbestos

This policy for the prevention of employee exposure to hazardous levels of asbestos is adopted by SEI Solutions LLC. in accordance with the following OSHA regulations:

1926.1101- **Asbestos**

SEI Solutions LLC. has implemented this policy to ensure that no employee is exposed to airborne concentration s of asbestos at levels in excess of permissible exposure limits (PEL). The Safety Director is the supervisor responsible for ensuring the following training, engineering controls, and safe work practices are implemented and enforced:

SEI Solutions LLC. will administrate a training program for all employees who are exposed to asbestos at or above PEL.

The Safety Director will provide employees with information and training prior to or at the time of their initial assignment to a work area where asbestos is present.

- Documented Asbestos Awareness Training will be provided for employees whose work activities may contact Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) but do not disturb the ACM or PACM during their work activities.
- If exposures are above the action level, employees will be provided with information and training at least annually thereafter.
- The training program will be accomplished in a manner that employees are able to understand and will include health effects associated with exposure to asbestos.
- Asbestos exposure poses adverse health effects including respiratory disease and various types of cancer. Exposure to asbestos has been shown to cause lung cancer, asbestosis, mesothelioma, and cancer of the stomach and colon.
- The training will also include information on the relationship between smoking and exposure to asbestos producing lung cancer.

- The following are possible location where employees may be exposed to Asbestos during their job functions. Asbestos material are used in the manufacture of heat resistant clothing, automotive brake and clutch linings, and a variety of building materials including:

Insulation	Roofing Felts
Soundproofing	Ceiling Tiles
Floor Tiles	Fire-resistant Drywall

Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed on materials located on beams, in crawlspaces, and between walls.

Examples of friable or non-friable asbestos include:

  - Friable means that the material can be crumbled with hand pressure and so is then likely to emit fibers. The fibrous or fluffy sprayed on materials used for fireproofing, isolation, or sound proofing are considered to be friable and readily release airborne fibers if disturbed.
  - Materials such as vinyl asbestos floor tile or roofing felts are considered non-friable and generally so not emit airborne fibers unless subjected to sanding or sawed, or if they are broken during demolition operations.

- A certificate of training will be provided and maintained.
- Regular monitoring of air quality in work areas will be provided to ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) in 30 minutes.

  - Air quality will be determined from breathing zone air samples.
  - The samples will be representative of the 8-hour TWA and 30-Min short-term exposure.
  - Measurement records of all monitoring teste will be kept available at SEI Solutions Main Office.

- The medical surveillance program for employees who potentially may be exposed to asbestos at or above the action level or PEL will be provided under the supervision of a licensed physician at no cost to the employee.
- The medical surveillance program is provided to ensure employees are not exposed to hazardous levels of asbestos in accordance with 1926.1101.
- If the TWA and/or excursion limit is exceeded, this written program to reduce employee exposure will be implemented. Engineering controls and work practices will be implemented to reduce/maintain the exposure below TWA.
- Reducing exposure levels will be accomplished by means of engineering controls, work practice controls, and the use of respiratory protection. Engineering and work practice controls will include exhaust systems for hand tools, wet methods, clean-up procedures, and PPE. This will be done except to the extent that such controls are not feasible.
- Respiratory will be used in the following 4 circumstances:

(1)	Work Practice Controls	(3)	To Reduce Exposure
(2)	Work Operations	(4)	In Emergencies

- SEI Solutions LLC. will provide, at no cost to the employees, respirators that meet NIOSH approval. Powered, air-purifying respirators will be available when employees choose to use this type, or when the respirator will provide adequate protection.
- Employees are informed of all regulated areas and are properly trained in entrance procedures, safety requirements, and practices while in regulated areas.
- All Class I, II and III asbestos work will be conducted within regulated areas. All other operations will be conducted within a regulated area where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed a PEL. Regulated areas will comply with the following requirements:

  - The regulated area will be demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area. Signs will be provided and displayed as required.
  - Access to regulated areas will be limited to authorized persons only.
  - All persons entering a regulated area where employees are required to wear respirators will be supplied with a regulation respirator.
  - Safety Director will ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area.
  - Safety Director will ensure that all asbestos work performed within regulated areas is supervised by a Competent Person.

- The SEI Solutions LLC. Respiratory Protection Program and required respiratory protective equipment is provided at no cost for all employees with potential for exposure to asbestos.
- In the event of an emergency where airborne hazardous materials are released at hazardous levels, employees not wearing sufficient PPE for the situation will be immediately evacuated to a safe area until the hazard is contained.
- Adequate ventilation and appropriate engineering controls will be ensured in all enclosed work areas.
- Employees will wear appropriate PPE at all times while in work areas. This PPE will include proper eye/face protection in accordance with 1910.133 where appropriate.
- When airborne concentration of asbestos are above the TWA, appropriate PPE will be provided. PPE will include coveralls, gloves, head coverings, foot coverings, face shields, and vented goggles.
- Safety Director will ensure that the negative pressure respirators fit properly and are checked annually to make sure that the respirator continues to fit

properly. Employees wearing negative pressure respirators will have either quantitative or qualitative fit test. Safety Director will supervise this testing.

- All employees who perform work in regulated areas are covered by this program. Employees who perform housekeeping activities during and after construction activities are covered by the asbestos construction standard.
- SEI Solutions LLC. employees will be protected from exposure when working on multi-contractor worksites. If employees working immediately adjacent to a Class I asbestos job are exposed to asbestos due to the inadequate containment of such job, Safety Director will either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to 1926.1101(f).
- Employees will be provided with information and instruction on respirators, protective clothing, other PPE, and their limitations.
- All appropriate regulation signs and labels will be posted in areas of potential exposure to asbestos.
- SEI Solutions LLC. employees will abide warning signs and labels and will not disturb the Asbestos Containing Material. Signs and labels will identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that Asbestos Containing Material (ACM) will not be disturbed. Safety Director will ensure that employees working in and adjacent to regulated areas comprehend the warning signs.
- The regulation warning signs will bear the following information:
- Warning signs that demarcate the regulated area will be provided and displayed at each location where a regulated area is required to be established. Signs will be posted as such a distance from a location that an employee may read the signs and take necessary protective steps before entering the area marked by the signs.

- Where the use of respirators and protective clothing is required in the regulated area, the warning signs will include the following:
- SEI Solutions LLC. will ensure that employees working in and contiguous to regulated areas comprehend the required warning signs that are posted. Means to ensure employee comprehension may include the use of foreign languages, pictographs, and graphics.

- Labels will be affixed to all products containing asbestos and to all containers containing such products, including waste containers. Where feasible, installed asbestos products will contain a visible label.

    - Labels will be printed in large, bold letters on a contrasting background.
    - Labels will be used in accordance with the requirements of 1910.1200 of OSHA's Hazard Communication Standard and will contain the following information.

- SDS for asbestos and all hazardous materials are available to employees at SEI Solutions main office.

Ammonia Awareness

Purpose

1.1 The purpose of this procedure is to advise employees in areas where ammonia is being used and to supply an awareness level basis about the properties and hazards of ammonia, general guidelines and training requirements.

Scope

2.1 This procedure applies to SEI Solutions LLC. operations where employees whose work activities may involve working with or around ammonia. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers SEI Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Responsibilities

3.1 **Managers and Supervisors**

- In coordination with the Safety Manager, develop and implement ammonia awareness training.
- Ensure personnel are aware of work that has the potential of exposure to ammonia.
- Identify possible locations where ammonia in the workplace may be used.
- Inform the Safety Manager of upcoming work involving ammonia, allowing the Safety Manager to provide any necessary monitoring or other required actions.
- Ensure employees comply with the ammonia awareness requirements.

Safety Manager:

- Coordinate annual ammonia awareness training activities.

Employees:

- Comply with the ammonia awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.

Procedure

4.1 Characteristics of Ammonia

Appearance

Ammonia is a colorless gas under normal conditions. It can be a liquid under pressure. It has a pungent, suffocating odor.

Description

Ammonia refers to solutions that are 50% ammonia or greater, ammonia anhydrous, and ammonia anhydrous liquefied, unless otherwise specified. Ammonia is a toxic gas or liquid that, when concentrated, is corrosive to tissues upon contact. Exposure to ammonia in enough quantities can be fatal. One of the highest production volume chemicals in the U.S., concentrated ammonia is used in manufacturing, refrigeration, and agriculture (as a fertilizer). Household ammonia is much less concentrated; it rarely causes burns, but it does cause irritation. The lowest level at which humans can detect the odor of ammonia (odor threshold) generally provides sufficient warning of exposure; however, persons with prolonged exposure to ammonia will lose their ability to detect the odor (olfactory fatigue). Ammonia commonly exists as part of a solution.

Health Effects

Some of the potential health effects of ammonia such as burning of the eyes, temporary blindness, coughing, chest pain, etc. Exposure of the eyes to ammonia may cause burning, tearing, temporary blindness and severe eye damage. Exposure of the skin to ammonia may cause severe burns and blistering. Exposure of the respiratory tract (mouth, nose and throat) to ammonia may cause runny nose, coughing, chest pain, severe breathing difficulties, severe burns and death.

Possible ways employees may be exposed to ammonia during their job functions. Some examples may include, but not limited to:

- Working on/near industrial refrigeration machinery rooms, equipment and/or piping
- Working in petroleum refineries
- Working with/near agricultural fertilizer

Methods of Dissemination:

- Indoor Air: Ammonia can be released into indoor air as a liquid spray (aerosol) or as a vapor.
- Water: Ammonia can be used to contaminate water.
- Food: Ammonia is unlikely to contaminate food due to unpalatable qualities rendered to food.
- Outdoor Air: Ammonia can be released into outdoor air as a liquid spray (aerosol) or as a vapor.
- Agricultural: If ammonia is released into the air as a liquid spray (aerosol), it has the potential to contaminate agricultural products. If ammonia is released as a vapor, it is highly unlikely to contaminate agricultural products.

Routes of Exposure

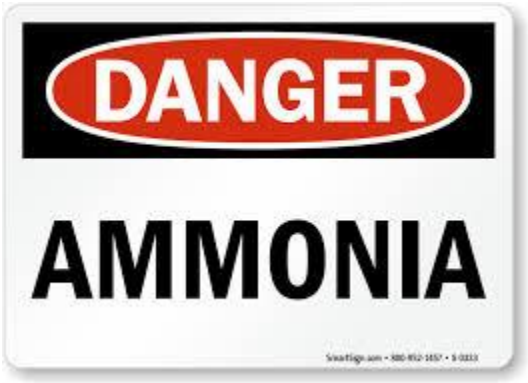
Ammonia can cause harm if inhaled and/or if it comes into contact with the eyes or skin. High concentrations of ammonia gas, liquid ammonia and solutions of ammonia can cause harm if inhaled or if they come into contact with eyes or skin.

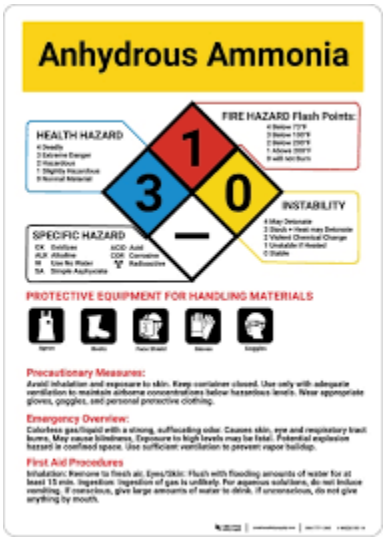
Pre-Job Planning for Related Work

Pre-job planning or a site assessment will be conducted prior to starting work and that the assessment will be documented on Job Safety Analysis Form. Documented planning will be conducted for those operations involving potential ammonia exposure and this includes anytime an active purge is being applied to a system in or around equipment associated with work. Some planning or assessment elements include:

- All proposed work requires a jobsite visit by the requestor and a unit operator to identify special precautions, equipment status and personal safety equipment requirements.
- The permit must clearly identify all hazards and special personal protective equipment requirements.

- Appropriate signage will be utilized and adhered to. Appropriate signage will include adequate warning as seen below.





Personal Protective Equipment

SEI Solutions employees will use impervious clothing, gloves and/or face shields if there is a possibility of skin contact with liquid ammonia or vessels containing liquid ammonia. Employees will be provided with and required to use impervious clothing, gloves, face shields and other appropriate protective clothing necessary to prevent any possibility of skin contact with liquid anhydrous ammonia or aqueous solutions of ammonia containing more than 10% by weight of ammonia. Similar precautions should be taken to prevent the skin from becoming frozen from contact with vessels containing liquid anhydrous ammonia.

Training

5.1 Employees will be aware of provisions of site-specific contingency/emergency plans. Employees will be aware of owners' contingency plans and provisions. Employees must be informed where ammonia is used in the host facility and aware of additional plant safety rules.

SEI Solutions shall provide training for all affected employees including any SEI Solutions employee working with or near ammonia and the training shall emphasize:

- The characteristics of ammonia.
- The hazards of ammonia.

- Proper PPE.
- Owner client requirements.

Documentation of training - Ammonia awareness training shall be documented including dates of training, location of training, employee name and trainer name.

HEXAVALENT CHROMIUM EXPOSURE PROGRAM

1.0 PURPOSE

1.1 This Safe Operating Procedure has been established to reduce or eliminate the hazards associated with Hexavalent Chromium and to standardize a method of utilizing best practices to help us achieve a zero-incident process.

1.2 Hexavalent Chromium (Cr(VI)) is a heavy metal component of stainless steel. Stainless steel is widely used in industrial processes because of its resistance to corrosion. The fume from welding processes may contain compounds of chromium, including hexavalent chromium, and of nickel. The composition of the base metals, the welding materials used, and the welding processes affect the specific compounds and concentrations found in the welding fume.

2.0 INTRODUCTION

2.1 Hexavalent Chromium (Cr(VI)) is a heavy metal component of stainless steel. Stainless steel is widely used in industrial processes because of its resistance to corrosion. The fume from welding processes may contain compounds of chromium, including hexavalent chromium, and of nickel. The composition of the base metals, the welding materials used, and the welding processes affect the specific compounds and concentrations found in the welding fume.

2.2 Hexavalent chromium compounds have varied uses in industry and are often used for their anticorrosive properties in metal coatings, protective paints, dyes and pigments. Hexavalent Chromium can also be formed when performing “hot work” such as welding on stainless steel, melting chromium metal or heating refractory bricks in kilns.

2.3 The major concern in the mechanical construction industry is the potential for overexposure from fumes created by welding or plasma cutting on stainless steel pipe and ducts, dust from grinding on stainless steel and from skin exposure. In most applications, engineering controls such as using localized exhaust ventilation and good welding work practices will mitigate the chances of overexposure. Respiratory protection will be required when adequate ventilation is not achievable.

3.0 POLICY

3.1 It shall be the policy of SEI Solutions to implement the various requirements of the Chromium Exposure Regulation as required by the U.S. Department of Labor, Occupational Safety and Health Administration §1910.1026.

3.2 This Chromium Exposure Plan applies to all work where an employee may be occupationally exposed to chromium. All work related to construction, alteration or repair is included.

3.3 Under this plan, work is to include, but not limited to the following:

3.3.1 Fumes from welding processes.

4.0 RESPONSIBILITIES

4.1 Employer

4.1.1 In administering the Hexavalent Chromium Awareness Program, SEI Solutions will:

4.1.1.1 Monitor the overall effectiveness of the program.

4.1.1.2 Provide personal protective equipment as needed.

4.1.1.3 Provide training to affected employees and supervisors.

4.1.1.4 Provide technical assistance as needed.

4.1.1.5 Preview and update the program on at least an annual basis, or as needed.

4.2 Safety Director

4.2.1 The Safety Director must assure that:

4.2.1.1 The procedures described in this program are followed.

4.2.1.2 Employees are properly trained and equipped to perform their duties safely.

4.2.1.3 All required inspections, tests, and recordkeeping functions have been performed.

4.3 Employees

4.3.1 All employees, including sub-contractor personnel, must comply with the requirements of this program.

4.3.2 Employees are responsible for reporting hazardous practices or situations to SEI Solutions immediate supervisor, as well as reporting incidents that cause injury to themselves or other employees.

5.0 TRAINING

5.1 SEI Solutions will provide the requisite training to ensure that employees acquire an understanding of the kinds of monitoring, testing, and protective measures required by OSHA's Hexavalent Chromium regulations.

5.1.1 These standards are designed to protect anyone who could be exposed from suffering serious health consequences.

5.2 All employees who have a reasonable potential for exposure to Hexavalent Chromium above the OSHA PEL shall receive training.

5.3 The training shall be performed prior to initial assignment and shall be repeated annually.

5.4 The training shall include:

5.4.1 the content of the standard.

5.4.2 the sources and types of exposure in their workplace.

5.4.3 personal protective equipment use.

5.4.4 health hazards of Hexavalent Chromium.

5.4.5 respirator use;

5.4.6 medical surveillance; and

5.4.7 the appropriate engineering controls and work practices.

5.5 Documentation will be kept in the employee's safety training file.

6.0 REGULATED AREAS

6.1 The hexavalent chromium standard for general industry, 29 CFR 1910.1026, requires the employer to establish a regulated area wherever a worker's exposure to airborne concentrations of Cr(VI) is, or can be reasonably expected to be, above the PEL.

6.2 The Cr(VI) standards for construction and shipyards do not include this requirement due to the practical difficulties expected in establishing regulated areas for operations in these sectors.

6.3 Employers are required to distinguish the regulated area from the rest of the workplace in a manner that adequately establishes and alerts workers to the boundaries of the regulated area

6.3.1 The standard does not specify how employers must identify the regulated area.

6.3.1.1 Warning signs, gates, ropes, barricades, lines, textured flooring or other methods may be appropriate.

6.3.2 Whatever method is selected, it must effectively warn workers who are not authorized to not enter the area.

6.4 Authorized personnel are those employees whose job duties require them to be in the area and may include maintenance personnel, managers and quality control engineers.

6.4.1 In addition, designated worker representatives may enter the regulated area to observe exposure monitoring.

6.5 All people who enter the regulated area must use proper protective equipment, including respirators when appropriate.

7.0 EXPOSURE LIMITS

7.1 The U.S. Department of Labor establishes maximum limits of exposure to chromium for all workers covered, including a Permissible Exposure Limit and Action Level.

7.2 The Permissible Exposure Limit, or PEL sets the maximum exposure limit for workers to chromium. The exposure limits for Hexavalent Chromium are as follows:

7.2.1 .5 micrograms per cubic meter (µg/m3) of air – When airborne concentrations are at or below this level, the standard is not applicable.

7.2.2 2.5 micrograms per cubic meter (µg/m3) of air – When airborne concentrations are at or above 2.5 micrograms p `Eer cubic meter (µg/m3) of air (this is the Action Level), but under 5 micrograms per cubic meter (µg/m3) of air, employers are required to implement certain measures to protect workers from over exposure.

7.2.3 . 5 micrograms per cubic meter (µg/m3) of air – Airborne concentrations above this level require compliance with more comprehensive requirements of the standard.

8.0 EXPOSURE MONITORING AND CONTROL

8.1 SEI Solutions must ensure that no employee is exposed to an airborne concentration of hexavalent chromium in excess of the PEL (5 micrograms per cubic meter of air as an 8-hour TWA).

8.2 This determination must be made without regard to the use of personal protective equipment, such as respiratory protection.

8.3 SEI Solutions cannot apply the level of protection that the respirator can provide to determine whether an employee is overexposed to hexavalent chromium present in the air.

8.4 The hexavalent chromium standards also set an action level, which is equal to one-half the permissible exposure limit.

8.5 Exposure of employees at or above the action level triggers certain other requirements of the hexavalent chromium standard even though employees are not exposed above the PEL.

9.0 COMPLIANCE PROGRAM

9.1 Prior to each job where employee exposure exceeds the PEL, SEI Solutions will establish:

9.1.1 A program to reduce employee exposure to the PEL or below. The compliance program will provide the following: A description of each activity in which chromium is emitted.

9.1.2 Specific plans to achieve engineering and work practice controls when the exposure level exceeds the PEL for more than 30 days per year.

9.1.3 Information on the technology considered meeting the PEL.

9.1.4 Air monitoring data that document the source of chromium emissions.

9.1.5 A work practice program including regulations for the use of protective work clothing, equipment, air monitoring, housekeeping and hygiene guidelines.

9.2 An employee should report to their supervisor and SEI Solutions Safety Director if they feel:

9.2.1 They have been exposed to at or above safe levels.

9.2.2 Experience symptoms of exposure.

9.2.3 Are exposed to an emergency of an uncontrolled release.

10.0 ENGINEERING CONTROLS

10.1 Ventilation such as local exhaust systems that capture airborne Cr(VI) near its source and remove it from the workplace.

10.2 Local exhaust or shop fans to extract fumes from work areas

10.3 Dust collection systems with Hepa filters

10.4 Substitute less toxic material or a process that results in lower exposures for a process that causes higher exposures

10.5 Isolation such as placing a barrier between employees and source of exposure

11.0 SAFE WORK PRACTICE CONTROLS

11.1 Safe work practices require maintenance of separate hygiene facilities (change rooms, showers, hand wash facilities and lunch areas), and require proper housekeeping practices.

12.0 PROTECTIVE CLOTHING AND EQUIPMENT

12.1 SEI Solutions will provide and ensure the proper use of personal protective equipment where employees are exposed to chromium above the PEL.

12.2 PPE will be provided at no cost to the employee.

12.3 Wear long-sleeved shirt, pants, welding jacket or welding sleeves.

12.4 Tyvek suits if necessary

12.5 Wear welding gloves

12.6 Wear safety glasses or goggles

12.7 Wear a face shield over eye protection when grinding

12.8 Wear a welding helmet over eye protection when welding

12.9 Wear appropriate respirator when needed

13.0 RESPIRATORS

13.1 When engineering and administrative controls do not reduce hazards below the OSHA's permissible exposure level (PEL), employees must wear respirators.

13.2 SEI Solutions will provide respiratory protection for the employee at no cost and will ensure that the respirator is used when:

13.2.1 Employee exposure to chromium exceeds the PEL

13.2.2 The employee requests a respirator.

14.0 HOUSEKEEPING

14.1 The Cr(VI) standard for general industry also includes housekeeping measures. Similar requirements were not included in the construction and shipyard standards due to expected difficulties in complying with these requirements in those industry sectors.

14.2 Proper housekeeping focuses on sources of exposure to Cr(VI) that engineering controls are not designed to address such as surface contamination, which can lead to skin contact.

14.3 Therefore, employers are responsible to ensure that all environmental work surfaces are kept as free as practicable of accumulations of Cr(VI)-containing materials.

14.4 Accordingly, any spills and releases of Cr(VI)-containing materials in the workplace must be promptly cleaned up and disposed in accordance with environmental regulations for hazardous waste disposal.

15.0 MEDICAL SURVELANCE

15.1 Medical surveillance serves several purposes when considering worker exposure to Cr(VI).

15.1.1 It allows physicians or other healthcare professionals to determine if an individual can be exposed to Cr(VI) at their workplace without experiencing adverse health effects.

15.1.2 It permits appropriate intervention to be taken when Cr(VI)-related adverse health effects are identified in an individual.

15.1.3 Finally, it determines an employee’s fitness to use personal protective equipment, in particular, respirators.

15.2 SEI Solutions will provide a medical surveillance program for all employees:

15.2.1 Who are exposed or who may be exposed to Cr(VI) at concentrations at or above the action level (as an 8-hour TWA) for 30 or more days per year; or

15.2.2 Experiencing signs and symptoms of adverse health effects associated with Cr(VI) exposures; or

15.2.3 Exposed in an emergency situation (i.e., any occurrence resulting in a uncontrolled release of Cr(VI) that is not an incidental release that can be controlled by workers in the immediate area or by maintenance personnel).

15.3 Some signs and symptoms of adverse health effects that are associated with exposure to Cr(VI) include blistering lesions, redness or itchiness of exposed skin, shortness of breath or wheezing that worsens at work, nosebleeds, and a whistling sound while inhaling or exhaling.

15.4 A licensed physician must perform or supervise all medical examinations and procedures, provided at no cost to employees and at a reasonable time and place.

16.0 FREQUENCY OF MEDICAL EXAMINATIONS

16.1 Employers must make medical examinations and consultations available to employees:

16.1.1 Prior to employee assignment to an area where negative-pressure respirators are worn,

16.1.2 Within 30 working days after assignment to a job involving exposure to Cr(VI) at any level, at least annually thereafter.

16.1.3 Within 30 days after a physician or licensed healthcare professional (PLHCP) issues a written medical opinion that recommends additional examination(s);

16.1.4 Whenever a worker shows signs or symptoms of adverse health effects associated with exposure to Cr(VI);

16.1.5 Within 30 days following exposure during an emergency involving an uncontrolled release of Cr(VI);

16.1.6 At the termination of employment unless the last examination provided was less than six months prior to the date of termination.

16.1.7 If the employee was examined within the past 12 months and that examination meets the criteria of the standard,

17.0 HYGENE AND PRACTICES

17.1 The Cr(VI) standards include requirements for change rooms, washing facilities, and eating and drinking areas when protective clothing and equipment are required to minimize exposure to Cr(VI). These requirements are:

17.1.1 **Change rooms** are required only when workers must change out of street clothes to use protective clothing and equipment.

17.1.1.1 Change rooms required by the Cr(VI) standards for general industry must conform to the requirements of 29 CFR 1910.141, whereas those specified in the Cr(VI) standard for construction must conform to the requirements of 29 CFR 1926.51.

17.1.1.2 In addition, they must be effective in preventing Cr(VI) contamination of street clothes, and be equipped with separate storage facilities for protective clothing and equipment and for street clothes.

17.1.2 **Washing facilities** must be provided and must be readily accessible and capable of removing Cr(VI) from the skin.

17.1.2.1 Washing facilities must comply with the sanitation requirements in 29 CFR 1910.141 (for general industry), 29 CFR 1926.51 (for construction).

17.1.3 SEI Solutions will ensure that affected workers use these facilities when necessary.

17.1.3.1 This includes making sure that workers who have skin contact with Cr(VI) wash their hands and faces at the end of the work shift and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics, or using the toilet.

17.1.4 Eating and drinking areas and surfaces must conform with 29 CFR 1910.141 (for general industry), and 29 CFR 1926.51 (for construction) and be maintained as free as practicable of Cr(VI) whenever employers allow workers to consume food or beverages at a worksite where Cr(VI) is present.

17.1.5 SEI Solutions employees are not to enter eating and drinking areas wearing protective clothing or equipment unless the protective clothing or equipment is properly cleaned beforehand.

17.1.6 Any method for removing surface Cr(VI) contamination from clothing and equipment may be used as long as it does not disperse the dust into the air or onto the worker's body.

18.0 RECORDKEEPING

18.1 SEI Solutions will maintain records of:

18.1.1 Worker Cr(VI) exposures (including air monitoring, data, historical monitoring data and objective data) and

18.1.2 medical surveillance records.

18.2 Air Monitoring Data

18.2.1 SEI Solutions will keep records of all employee exposure monitoring used to comply with the standard for 30 years. The record must indicate:

18.2.1.1 The date of measurement for each sample taken.

18.2.1.2 The operation involving exposure to Cr(VI) that was monitored;

18.2.1.3 Sampling and analytical methods used and evidence of their accuracy.

18.2.1.4 The number, duration and results of samples taken.

18.2.1.5 The type of protective devices used (e.g., type of respirators worn); and

18.2.1.6 The name, Social Security number and job classification of all workers represented by the monitoring and specifying which employees were monitored.

19.0 DOCUMENT HISTORY

Title:	HEXAVALENT CHROMIUM EXPOSURE PROGRAM	**Safety Manual Document #:**	TBD
Pages:	9	**Effective Date:**	5/2/2020
Preparer:	George Humphrey	**Owner:**	Safety Mgr.
		Approver:	COO

Revision History			
Date	**Section**	**Brief Description of Changes**	**Approver Initials**

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Benzene Safety Program

Purpose

This program applies to the prevention of employee exposure to Benzene. This program was designed to cover 29 CFR 1910.1028. SEI Solution LLC. recognizes the potential for Benzene exposure on some of its projects. Exposure to Benzene can be reduced or eliminated, if this policy is followed.

Benzene is a clear, colorless, organic hydrocarbon, liquid with an aromatic odor. Benzene gives off a flammable gas almost three times heavier than air. Benzene is produced from the refining of petroleum and is usually contained in tanks, pumps, pipes or other enclosed vessels. SEI Solutions LLC. employees can become involved in cleaning any of these vessels and the potential for exposure is present. Employees should be aware of clients' contingency plans and provisions. Employees must be informed where benzene is used in the host facility and aware of additional plant safety rules.

Training detailing the hazards of Benzene, will be conducted at or before an employee is scheduled for a job with the potential for Benzene exposure. The training will be documented and at a minimum cover the following criteria:

1. Physical Characteristics and Description of Benzene
2. Hazards (Including Acute and Chronic Health Hazards)
3. Protective Measures (Including PPE & Proper Decontamination Procedures)
4. Signs and Symptoms of Exposure
5. Accident Procedures
6. Emergency procedures (Including Site Specific per location)

All employees working on a jobsite with potential for exposure will wear the appropriate Personal Protective Equipment (PPE). PPE will be used in the appropriate manner in which it was intended to prevent any exposure or contact with a worker.

At a minimum, the following PPE must be used to prevent exposure:

Safety Glasses/Goggles with side shields, Face Shield, Appropriate impervious Rain or a Acid Suit, Gloves, and Boots.

Respiratory protection may be necessary if the airborne concentrations are above permissible limits. The proper respirator shall be selected based upon these concentrations. Only respirators approved by MSHA and NIOSH will be utilized. Refer to the SEI Solutions Cleaning Respiratory Protection Policy for further guidance on respirators. Respiratory protective equipment is required when concentrations reach 0.5 ppm over an 8-hour time weighted average. The (STEL) or short term exposure limit is 5 ppm over any 15-minute time period. If conditions exist where engineering or respiratory controls could fail, monitoring will be conducted and reported to employees in writing within fifteen day of the monitoring. Please refer to the following table to select the proper protection:

Benzene Concentration	Appropriate Protections
≤ 10 ppm	Air purifying - Half-mask respirator with organic vapor cartridges
≤ 50 ppm	Full-face - respirator with organic vapor cartridges. Full-face - gas mask with chin style canister.
≤ 100 ppm	Full-face - powered air-purifying respirator with organic vapor canister
≤ 1,000 ppm	Full-face - supplied air respirator.
< 1,000 ppm or unknown	Self-contained breathing apparatus - in positive pressure mode. Full-face - positive pressure supplied air with auxiliary self-contained air supply.
Emergency Evacuation	Any organic vapor gas mask Full-face - self-contained breathing apparatus
Firefighting	Full-face - self-contained, breathing apparatus in positive pressure mode.

Exposure

Absorption of Benzene into the body can happen through any of the following routes: Absorption, Injection, Inhalation, and Ingestion.

Benzene exposure can be classified in two ways. Acute exposure – Short term contact of large levels of Benzene. Chronic exposure – Long term exposure to small levels of Benzene.

Acute exposure - affects the central nervous system, also causes irritation of throat, eyes, and skin. If exposure concentrations are high headaches, loss of balance, and confusion may occur.

If an employee has an acute exposure they must have a urine sample taken by the end of the work shift. It must be a urinary phenol test and be performed within 24 hours of exposure.

If the phenol test shows a level below 75 mg phenol/L, no more tests are required. If the test shows a level greater than 75 mg phenol/L the employee will be subject to a blood count with differentials on a monthly basis for a duration of three months. The employee must not have any further exposure for the three-month duration.

For any serious exposure, medical attention should be contacted immediately.

First aid procedures for acute exposures include the following:

For Inhalation exposure – Remove person to fresh air environment, start CPR if breathing has stopped.

For Absorption exposure – Eyes: flush eyes immediately for twenty minutes with lukewarm water, start CPR if breathing has stopped. Ensure water is not contaminated.

Skin: discard contaminated clothing immediately, remove and additional Benzene remaining, wash area thoroughly with water

For Ingestion - flush mouth thoroughly with clean water, consume eight ounces of water, vomiting should not be induced, nothing should be given to the person if they are unconscious or having convulsions.

Chronic exposure - affects the bodies' blood forming system. This exposure may also change the structure of red blood cells.

Records

Medical records will include the following:
Employee name and social security number, written exams and opinions of medical provider, work and medical history of exposed employee, any medical complaints, any other exposure hematological toxins.
These records will be maintained for the duration of their employment plus thirty years.
Any job that involves Benzene exposure will have its records maintained for thirty years.
These records must include the following: a description of the sampling methods used, results of samples, date and location of job, types of protection used (respirators, PPE), exposure levels of exposed employees, names, addresses, and social security numbers of all employees on jobsite.

Precautions for Safe Use, Handling and Storage

Benzene liquid is highly flammable. It should be stored in tightly closed containers in a cool, well ventilated area. Benzene vapor may form explosive mixtures in air. All sources of ignition must be controlled. Use nonsparking tools when opening or closing benzene containers. Fire extinguishers, where provided, must be readily available. Know where they are located and how to operate them. Smoking is prohibited in areas where benzene is used or stored. Ask your supervisor where benzene is used in your area and for additional plant safety rules.

Process Safety Management Compliance Program

Purpose

SEI Solutions has processes within our customer's operations which involve highly hazardous chemicals. In order to protect our employees and the environment SEI Solutions has developed this Process Safety Management Compliance Program.

In recent years, a number of catastrophic accidents in the chemical industry have drawn attention to the safety of processes involving highly hazardous chemicals. OSHA determined that employees have been and continue to be exposed in their workplaces to the hazards of releases of highly hazardous chemicals which may be toxic, reactive, flammable, or explosive.

The requirements of the PSM standard are intended to eliminate or mitigate the consequences of such releases. The standard emphasizes the application of management controls when addressing the risks associated with handling or working near hazardous chemicals.

Administration

The Safety Manager is responsible for ensuring that this program is fully implemented and updated to ensure its effectiveness. The company's Process Safety Management Program is located in the Safety Manager's office.

Introduction

This program has been developed because some of the customer's facilities that SEI Solutions works at meet the requirements of OSHA Standard 29 CFR 1910.119 Process Safety Management of Highly Hazardous Substances (PSM).

References

- 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals; Final Rule; February 24, 1992, Federal Register Vol. 57, No. 36, pp. 6356-6417.

- OSHA Instruction CPL 2.45B, June 15, 1989, the Field Operations Manual (FOM).

- OSHA Instruction STP 2.22A, CH-2, January 29, 1990, State Plan Policies and Procedures Manual.

- OSHA Instruction CPL 2.94, July 22, 1991, OSHA Response to Significant Events of Potentially Catastrophic Consequence.

- OSHA Instruction ADM 1-1.12B, December 29, 1989, Integrated Management Information System (IMIS) Forms Manual.

Responsibilities

Company Management

Management assigns sufficient resources and qualified Supervisors to ensure safe operating and material conditions are maintained.

Management will assign a qualified project supervisor to oversee and direct employees at customer facilities during operations, maintenance and training in site specific operations that fall under the PSM standard. Project supervisors in the various elements of this program request, as necessary, assistance from Customer Management to follow the site specific PSM Program.

The facility at which services are being provided will inform SEI Solutions employees of hazards in the covered processes, safe operating procedures, and good engineering practices, and also ensure as contractors they are provided the information required by this program.

Training

SEI Solutions will:

- Ensure all employees are trained in work practices necessary to perform their job safely.
- Inform employees of the process hazards and Emergency Action Plan. Employees will be instructed in known potential fire, explosion, or toxic release hazards related to their job and the process, and the applicable provisions of the emergency action plan.
- Making sure employees follow facility safety rules
- Informing the facility employer of any special hazards caused by the contractor’s operations.

- Documentation of training: including the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

Facility Employer will:

- Provide PSM site specific training for all contract employees as part of the site safety training.
- This training will include potential fire, explosion, and toxic release hazards.
- Training should also include the facility Emergency Action Plan.

Hazardous Process Information

Due to the potential for danger being so great, employers are required to develop and maintain written safety information about a hazardous process. This information will include:

I. *Hazards of chemicals being used or produced. The Material Safety Data Sheet is the source of this information which includes:*
- Chemicals permissible exposure limits
- Information on chemical stability
- Reactions of mixing with other chemicals.
- Any physical information or data
- Chemical information regarding toxicity, reactivity and corrosiveness

II. *Equipment in process:*
- Instrumentation diagrams and piping
- Type or classification of anything electrical
- Ventilation or relief system information
- Any design codes and standards
- Any material and energy balances for new processes
- Any construction materials
- All Safety systems

III. *Technologies involved in process:*
- Any flow diagrams
- The maximum intended inventories
- Limits for safely operating including temperature, composition, pressure, and flow rates
- Any potential results for exceeding these limits

Process Hazard Analysis

All potential hazards need to be recognized and addressed before they grow into catastrophes. This is the responsibility of the facility or sites were services are being performed. The hazardous analysis team conducts investigations to recognize and evaluate all processes that might be hazardous. Its objective is to stop an accident before it happens. Process hazard analysis covers the following topics:

- The hazards of the process;
- Identify previous incident which had a likely potential for catastrophic consequences in the workplace;
- Engineering and administrative controls;
- Detection methods for providing early warning of releases;
- Consequences of failure of engineering and administrative controls;
- Human factors ; and
- Qualitative evaluation of a range of the possible safety and health effects of failure of controls on employees.
- The location of a process area

When the team's analysis is complete, its findings are reviewed and considered. The analysis will again be reviewed and updated every five years.

Standard Operating Procedures

Facility Employers are required to develop and implement written standard operating procedures (SOPs) that provide clear instructions for safely conducting operations and maintenance. Standard operating procedures will be readily accessible to employees and contractors. The standard operating procedures will be reviewed as often as necessary to assure that they reflect current operating practice. The Company will certify annually that these standard operating procedures are current and accurate.

Facility Employers will develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel. These safe work practices will apply to employees and contractor employees.

<u>Standard Operating Procedures will include:</u>

1. Initial startup.

2. Normal, temporary and emergency operations.
3. Normal shutdown.
4. Restart
5. Startup following a turnaround or after an emergency shutdown.
6. Operating limits.
7. Consequences of deviation & Steps required to correct or avoid deviation.
8. Safety and health considerations.
9. Precautions necessary to prevent exposure, including engineering controls.
10. Administrative controls, and personal protective equipment.
11. Control measures to be taken if physical contact or airborne exposure occurs.
12. Quality control for raw materials and control of hazardous chemical inventory levels.
13. Safety systems and their functions.

Training

Initial Training

Each employee will be trained in an overview of the process and in the operating procedures. The training will include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.

Refresher Training

Refresher training will be provided at least every three years, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process. The facility employer, in consultation with the employees involved in operating the process, will determine the appropriate frequency of refresher training.

Training Documentation

The employer will ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The company will prepare a record that contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

Contractors

All people involved in a potentially hazardous process must be trained properly. This includes contract workers, such as SEI Solutions , as well as regular employees. The Process Safety Management standard spells out the duties of the employing facility and the contract employer.

1. The specific duties of the employing facility include:
    - Informing the contractor of potential fire, explosion and toxic release hazards
    - Explaining the Emergency Action Plan to the contractor
    - Evaluate contractor safety programs
    - Provide ongoing safety performance audits
    - Adopting ways to control contract employee entry into and exit from process areas.

2. The contractor has these responsibilities:

- Ensuring that each contract employee has been properly trained to perform his or her job safely.
- Informing contract workers of the process hazards and Emergency Action Plan.
- Making sure contract employees follow facility safety rules
- Informing the facility employer of any special hazards caused by the contractor's operations.

Pre-Startup Safety Review

Facility Employers will perform a pre-startup safety review for new facilities and for modified facilities when the modification is significant enough to require a change in the process safety information. The purpose of the Pre-Startup Review is to confirm that, prior to the introduction of highly hazardous chemicals to a process:

- Construction and equipment is in accordance with design specifications;
- Safety, operating, maintenance, and emergency procedures are in place and are adequate;
- Modified facilities meet the requirements contained in Management of Change; and
- Training of each employee involved in operating a process has been completed.

Mechanical Integrity

Human error is not always cause of incident or accidents. For this reason, steps must be taken to ensure that vital machinery is serviced, designed, installed and operated properly. The following procedures are necessary to maintain mechanical integrity:

I. On going written maintenance procedures must be established.

II. Maintenance workers and contractors must receive training in the process and its hazards.
III. All parts that are repaired or replaced because they are defective or worn must be done so quickly enough to prevent an unsafe or dangerous operation.
IV. Any new equipment and replacement equipment parts must be in working order.
V. All process equipment must be inspected and tested.

Hot Work

The Facility Employer will issue a hot work permit for hot work operations conducted on or near a covered process. The permit will document that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it will indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit will be kept on file until completion of the hot work operations.

Management of Change (MOC)

The Facility Employer will establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to facilities that affect a covered process.

Prior to the change, address the following considerations:

- The technical basis for the proposed change;
- Impact of change on safety and health;
- Modifications to operating procedures;
- Necessary time period for the change; and,
- Authorization requirements for the proposed change.

The employer will train affected employees and contractors in the change prior to start-up of the process or affected part of the process.

The employer will up-date all PSI, PHA and Standard Operating Procedures.

Incident Investigation

Each incident that resulted in, or could reasonably have resulted in a catastrophic release of highly hazardous chemical in the workplace will be investigated. An incident investigation will be initiated as promptly as possible, but not later than 48 hours following the incident.

Establish an incident investigation team which consists of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident

An incident report will be prepared at the conclusion of the investigation that includes at a minimum:

- Date of incident
- Date investigation began
- Description of the incident
- Factors that contributed to the incident
- Recommendations resulting from the investigation

Corrective Actions

The employer will establish a system to promptly address and resolve the incident report findings and recommendations. Resolutions and corrective actions will be documented

Report Review

The report will be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contractors where applicable. Incident investigation reports will be retained for five years

Emergency Planning & Response

Facility Employer will establish and implement an emergency action plan for the entire plant in accordance with the provisions of 29 CFR 1910.38(a). and 29 CFR 1910.120(a), (p) and (q). The emergency action plan will include:

1. Procedures for handling small releases
2. Alarms and other methods for alerting workers
3. Emergency shutdown
4. Evacuation procedures and routes
5. Accounting for all employees after evacuation
6. How to report emergencies
7. Rescue and medical duties for workers
8. Employee Training

Compliance Audits

The Facility Employer will certify compliance with the provisions of the PSM Standard at least every three years to verify that the procedures and practices developed under the standard are adequate and are being followed.

The compliance audit will be conducted by at least one person knowledgeable in the process.

A report of the findings of the audit will be developed.

The Company will promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

The Company will retain the two (2) most recent compliance audit reports.

Trade Secrets

The Facility Employer will make all information necessary to comply with the section available to those persons responsible for compiling the process safety information, those assisting in the development of the process hazard analysis, those responsible for developing the operating procedures, and those involved in incident investigations, emergency planning and response and compliance audits without regard to possible trade secret status of such information.

There is no restriction in the OSHA Standard 1910.119 which prevents the employer from requiring any persons to whom the information is made available to enter into confidentiality agreements not to disclose the information.

Rules and procedures set forth in OSHA Standard 1910.1200, employees and their designated representatives will have access to trade secret information contained within the process hazard analysis and other documents required to be developed by this standard.

Compressed Gas Cylinders

1. Purpose

The purpose of this program is to prevent injury from failing or failure of compressed gas cylinders and to establish requirements for handling, lifting and storying compressed gas cylinders safely.

2. Applicability

This program covers all employees and contractors who handle, transport and/or use compressed gas cylinders.

3. Policy

It is the policy of SEI Solutions LLC. To provide a safe and healthy place to work. Due to the risk posed by Compressed Gas Cylinders, it is imperative that all personnel involved with compressed gas cylinders take specific action to ensure that, as much as possible, a hazard is not created.

4. Responsibilities

4.1. Administration, Safety Department, Managers, and Supervisor shall be responsible for:

4.1.1. Shall ensure that all employees are aware of the proper handling, storage and use requirements for compressed gas cylinders.

4.1.2. Shall ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.

4.1.3. Provide technical support to departments and employees when questions arise with regards to compressed gas cylinder safety.

4.2. Employees shall be responsible for:

4.2.1. Shall follow all requirements regarding the safe handling, storage and use of compressed gas cylinders.

5. General

5.1. Condition

Cylinders shall not be accepted, stored or used if evidence of denting, bulging, pitting, cuts, neck or valve damage is observed. If damage is observed:

5.1.1. The cylinder must be taken out of service.

5.1.2. The cylinder's owner shall be notified to remove the cylinder from the premises.

5.1.3. If owned, the cylinder shall be de-pressured and inspected as required by this program.

5.2. Cylinder Identification

5.2.1. Gas identification shall be stenciled or stamped on the cylinder or a label used. No compressed gas cylinder shall be accepted for use that does not legibly identify its content by name.

5.3. Handling

5.3.1. Valve caps must be secured onto each cylinder before moving or storage.

5.3.2. Secure the cylinder in a blanket when being lifted by mechanical means. Slings, ropes or electromagnets are prohibited to be used for lifting compressed gas cylinders.

5.3.3. The preferred means to move compressed gas cylinders is with a cart, carrier or with a helper.

5.3.4. Compressed gas cylinders must not be allowed to strike each other.

5.3.5. When a cylinder cap cannot be removed by hand the cylinder shall be tagged "Do Not Use" and returned to the designated storage area for return to vendor.

5.4. Storage

5.4.1. All cylinders must be secured upright in a safe, dry, well-ventilated area that limits corrosion and deterioration, and away from sunlight and heat sources.

5.4.2. Cylinders must be secured in a vertical position by means that will prevent cylinder damage from being knocked over or falling.

5.4.3. When securing the cylinder, the restraints shall not be attached to electrical conduit or process piping.

5.4.4. Empty and non-empty cylinders shall be stored separately. All stored cylinders shall be capped.

5.4.5. Oxygen cylinders must be stored a minimum of 20 feet from combustible gas cylinders or areas where there may be open flame or arcing. Cylinders may also be stored where the oxygen is separated from combustible gas cylinders by a 5 foot or higher wall with a fire resistance rating of 30 minutes.

5.4.6. Storage areas for full and empty cylinders must be designated and labeled. Cylinders should be stored in definitely assigned

places away from public hallways, elevators, stairs or gangways.

5.5. Use

5.5.1. Cylinders must be equipped with the correct regulators. Regulators and cylinder valves should be inspected for grease, oil, dirt and solvents. Only tools provided by the supplier should be used to open and close cylinder valves.

5.5.2. Never force or modify connections.

5.5.3. Only regulators and gauges shall be used within their designated ratings.

5.5.4. The use of a pressure-reducing regulator is required at the cylinder, unless the total system is designed for the maximum cylinder pressure.

5.5.5. Valves must be closed when cylinders are not in use.

5.5.6. Cylinders shall not be used as rollers or supports.

5.5.7. Cylinders shall not be placed where they can come in contact with electrical circuits.

5.5.8. Cylinders must be protected from sparks, slag or flame from welding, burning or cutting operations.

5.5.9. Empty cylinders must be returned to designated storage areas as soon as possible after use.

6. Inspection of Compressed Gas Cylinders

6.1. SEI Solutions LLC. shall determine that compressed gas cylinders under its control are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the Hazardous Materials Regulations of the Department of Transportation (49 CFR parts 171-179 and 14 CFR part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962.
Some elements include, but are not limited to:

6.1.1. Hoses and connections should be inspected regularly for damage. Hoses should be stored in cool areas and protected from damage.

6.1.2. These owned cylinders shall be visually inspected prior to charging, before each use and at least annually

6.1.3. All inspections and testing must be documented.

6.2. High Pressure Cylinders

6.2.1. High Pressure are those cylinders marked for service pressures of 900 psi and greater.

6.2.2. High pressure cylinders shall be taken out of service and submitted for re-qualification testing when any of the following conditions are identified by visual inspection.

6.2.3. Cuts, dings, gouges, dents bulges, pitting, neck damage or evidence of exposure to fire.

6.2.4. The cylinders shall be inspected and retested according to the requirements stated in 49 CFR 180.205 and .209.

6.2.5. Re-qualification of non-damaged cylinders shall be conducted per the schedule in 49 CFR 180.209.

6.3. Low Pressure Cylinders

6.3.1. Low pressure are those cylinders marked for service pressures of less than 900 psi.

6.3.2. Low pressure cylinders fall into two categories, those requiring requalification and those that do not require re-qualification.

6.3.3. Low pressure cylinders that do not require re-qualification shall be taken out of service and condemned when any of the following conditions are identified during inspection:

6.3.3.1. The tare weight of the cylinder is less than 90% of the stamped-on weight of the cylinder. Observed pitting, dents, cuts, bulging, gouges or evidence of exposure to fire.

6.3.3.2. Low pressure cylinders subject to re-qualification shall be taken out of service, inspected and retested when visual inspection identifies any of the following conditions; dents, bulges, pitting or neck damage.

6.3.4. Re-qualification of non-damaged cylinders shall be conducted per the schedule in 49 CFR 180.209.

7. Leaking Cylinders

7.1. Leaking cylinders should be moved promptly to an isolated, well-ventilated area, away from ignition sources. Soapy water should be used to detect leaks. If the leak is at the junction of the cylinder valve and cylinder, do not try to repair it. Contact the supplier and ask for response instructions.

8. Transportation

8.1. Cylinders must be transported in a vertical secured position using a cylinder basket or cart and must not be rolled. Regulators should be removed, and cylinders capped before movement. Cylinders should not be dropped or permitted to strike violently, and protective caps are not used to lift cylinders.

9. Empty Cylinder Marking

9.1. Cylinders should be marked as "MT" and dated when empty. Never mix gases in a cylinder and only professionals should refill cylinders. Empty cylinders must be handled as carefully as when filled.

10. Engineering Controls

10.1. Engineering controls such as emergency shutoff switches, gas cabinets and flow restrictors should be used wherever possible to control hazards. Emergency eyewash facilities should be present where corrosive gases or materials are used.

11. Training

11.1. All SEI employees who deal with Compressed Gas Cylinders shall receive training on this policy prior to assignment.

11.2. Training shall include instruction on:

- Proper use of cylinders
- Proper handling of cylinders
- Proper storage of cylinders
- Actions to take in the event of a leaking cylinder.
- Inspection methods and processes.

Inorganic Arsenic Safety Program

Purpose

29 CFR 1010.1018 This program applies to all occupational exposures to inorganic arsenic except that this section does **not apply** to employee exposures in agriculture or resulting from pesticide application, the treatment of wood with preservatives or the utilization of arsenically preserved wood.

Exposures to inorganic arsenic may occur:

1. During the manufacture of insecticides, weed killers and fungicides.
2. During use in the manufacture and handling of calcium arsenate
3. During use in the manufacture of electrical semiconductors, diodes, and solar batteries.
4. During use as an addition to alloys to increase hardening and heat resistance.
5. During smelting of ores

The health hazard to inorganic arsenic is high. Exposure to airborne concentrations of inorganic arsenic may cause lung cancer and can be a skin irritant. Inorganic arsenic may also affect your body if swallowed. One compound, arsenic trichloride, is especially dangerous because it can be absorbed readily through the skin. Because inorganic arsenic is a poison, you should wash your hands thoroughly prior to eating or smoking.

Inorganic arsenic definition includes: Copper acetoarsenite, arsenic and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).

The Permissible Exposure Limit (PEL): Employee is exposure to inorganic arsenic at concentrations greater than 10 ug/m³ of air averaged over any 8-hour period.

Action Level: a concentration of inorganic arsenic of 5 ug/m³ of air averaged over any eight (8) hour period.

No employee may be exposed to any **skin or eye contact** with arsenic trichloride or to skin or eye contact likely to cause skin or eye irritation.

Note: Even though the airborne PEL for arsenic trichloride is 0.01 mg/m3, when skin contact occurs, overexposure may occur.

Procedures:

The following steps will be taken in the order presented:

The steps to be followed in this program are:

1. Identify types of work where inorganic arsenic exposure may occur, **see above.**
2. Establish, through exposure monitoring, that exposures, without respiratory protection, are at or above the action level from inorganic arsenic which is 5 ug/m³ of air averaged over any eight (8) hour period.

   Note: At the above exposure level, a written compliance program will be established and established and implemented to reduce employee exposure to inorganic arsenic to or below the PEL by means of engineering and work practice controls.
3. Establish **regulated areas** where the possibility of exposure to inorganic arsenic above the PEL, 10 ug/m³ of air averaged over an 8-hour time period, is eliminated first through administrative and engineering controls and, if necessary, through the use of PPE.
4. Ensure no employee may work in the regulated areas until they have received **documented training** related to inorganic arsenic exposures, have partaken in a **medical surveillance program, and practice procedures, the plan for emergency, and proper use of PPE items.**
5. Establish a **respiratory protection program** addressing specific inorganic arsenic exposures.
6. **Review written procedures annually or more often and update them if significant changes occur.**

Exposure Monitoring

Determination of airborne exposure levels shall be made from air samples that are representative of each employee's exposure to inorganic arsenic over an eight (8) hour period.

Note: Employee exposure is that exposure which would occur if the employee were not using an respirator.

Full shift (for at least 7 continuous hours) personal samples including at least one sample for each shift for each job classification in each work area will be collected.

Initial Monitoring

Each workplace or work operation where potential exposure to inorganic arsenic exist will be monitored to accurately determine the airborne concentration of inorganic arsenic to which employees may be exposed.

Frequency

1. If the initial monitoring reveals employee exposure to be below the action level [5 ug/m³ of air averaged over any eight (8) hour period] the measurements **need not be repeated** unless there has been a production, process, control or personal change which may result in new or additional exposure to inorganic arsenic, or whenever there is reason to suspect a change which may result in new or additional exposures to inorganic arsenic.
2. If the initial monitoring, required by this section, or subsequent monitoring reveals employee exposure to be above the permissible exposure limit [inorganic arsenic at concentrations greater than 10 ug/m³ of air averaged over any 8-hour period], monitoring shall be repeated at least quarterly.
3. If the initial monitoring or subsequent monitoring reveals employee exposure to be above the action level and below the permissible exposure limit the employer shall repeat monitoring at least every six months.
4. Continue monitoring at the required frequency will proceed until at least two consecutive measurements, taken at least seven (7) days apart, are below the action level.

Of course, if a production, process, control or personal change which may result in new or additional exposure to inorganic arsenic, then monitoring will continue as above.

Notification of Monitoring

Affected employees will be notified within 15 working days after the receipt of the results of any monitoring be either individually in writing or by posting the results in an appropriate accessible location.

Compliance Program

A written compliance program shall be implemented when the PEL of 10 ug/m³ is exceeded to reduce exposures to or below the permissible exposure limit by means of engineering and work practice controls.

Written plans for these compliance programs shall include at least the following:

1. Description of each operation in which inorganic arsenic is emitted, e.g. machinery used, material processed, controls in place, crew size, operating procedures and maintenance practices.
2. Engineering plans and studies used to determine methods selected for controlling exposure to inorganic arsenic.
3. A report of the technology considered in meeting the permissible exposure limit.
4. Monitoring date.
5. A detailed schedule for implementation of the engineering controls and work practices that cannot be implemented immediately and for the adaption and implementation of any additional engineering and work practices necessary to meet the permissible exposure limit.
6. Whenever the employer will not achieve the permissible exposure limit with engineering controls and work practices by December 31, 1979, the employer shall include in the compliance plan an analysis of the effectiveness of the various controls, shall install engineering controls and institute work practices on the quickest schedule feasible, and shall include in the compliance plan and implement a program to minimize the discomfort and maximize the effectiveness of respirator use; and
7. Other relevant information.

Written plans for such a program shall be submitted upon request to the Operations Manager and the Safety Director and shall be available at the worksite for examination and copying by the Site Supervisor, any affected employee or authorized employee representatives.

The written plan must be reviewed and updated at least annually [more often, if necessary] to reflect the current status of the program.

Training Program

A training program will be instituted per 1910.1018 (o)(1)(i).

Each employee who is subject to exposure to inorganic arsenic above the action level without regard to respirator use, or for whom there was the possibility of skin or eye irritation from inorganic arsenic, will be trained and employee participation will be ensured.

The training program for which 1910.1018 applies will be provided will be provided at the time of initial assignment and at least annually for other covered employees thereafter; and the employer shall assure that each employee is informed of the following:

1. The information contained in **29 CFR 1910.1018, App A Inorganic arsenic substance information sheet;**
2. The quantity, location, manner of use, storage, sources of exposure, and the specific nature of operation which could result in exposure to inorganic arsenic as well as any necessary protective steps.
3. The purpose, proper use, and limitation of respirators.
4. The purpose and a description of the medical surveillance program as required by paragraph (n) of this section.
5. The engineering controls and work practices associated with the employee's job assignment; and
6. A review of 29 CFR 1910.1018.
7. Access to training materials; Specifically, 29 CFR 1910.1018 and its appendices will be made readily available to affected employees.

The employer shall make readily available to all affected employees a copy of this standard and its appendices.

Upon request, all materials relating to the employee information and training program will be provided to the Operations Manager and Safety Director.

Regulated Area

Regulated areas shall be established where worker exposures to inorganic arsenic, without regard to the use of respirators, are in excess of the permissible limit.

Regulated areas shall be demarcated and segregated from the rest of the workplace in any manner that minimized the number of persons who will be exposed to inorganic arsenic.

Access to regulated areas shall be limited to authorized persons or to person otherwise authorized by the Act or regulations issued pursuant there to enter such areas.

All persons entering a regulated area shall be supplied with a respirator, selected in accordance with the provision of our Respiratory Protection Program, specifically 29 CFR 1910.134(b) through (d) (except (d)(1)(iii)), and (f) through (m).

Note: If an employee exhibits breathing difficulty during fit testing or respirator use, they must be examined by a physician trained in pulmonary medicine to determine whether they can use a respirator while performing the required duty.

Prohibited activities in regulated areas:

Food or beverages are not to be consumed, smoking products, chewing tobacco and gum are not to be used and cosmetics are not to be applied.

Note: The above may be conducted in the lunchrooms, change rooms and showers

Note: Drinking water may be consumed in regulated areas.

Protective Work Clothing and Equipment

Where the possibility of skin or eye irritation from inorganic arsenic exist, and for all workers working in regulated areas, appropriate and clean protective work clothing and equimpment shall be provided at no cost to the employee. This clothing and equipment would include, but not be limited to:

1. Coveralls or similar full-body work clothing.
2. Gloves, and shoes or coverlets.
3. Face shields or vented goggles when necessary to prevent eye irritation, which comply with the requirements of 1910.133(a)(2) -(6).
4. Impervious clothing for employee's subject to exposure to arsenic trichloride.

Cleaning and replacement

The above protective clothing will be provided a freshly laundered and dry condition at least weekly, and daily if the employee works in areas where exposures are over 100 ug/m³ of inorganic arsenic or in areas where more frequent washing is needed to prevent skin irritation.

The above protective clothing will be cleaned, laundered, or disposed of at no cost to the employee.

The protective clothing must be removed at the completion of work shift only in designated change areas.

Contaminated protective clothing which is to be cleaned, laundered, or disposed of, will be placed in a closed container in the change area which prevents dispersion of inorganic arsenic outside the container.

Any person who cleans or launders clothing, above, will be notified in writing of the potentially harmful effects including the carcinogenic effects of exposure to inorganic arsenic.

Label on contaminated protective clothing and equipment.

Containers of contaminated protective clothing and equipment in the workplace or which are to be removed from the workplace must be labeled and the labels shall include the following information:

DANGER: CONTMINATED WITH INORGAINC ARSENIC. MAY CAUSE CANCER. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF INORGANIC ARSENIC CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL REGULATIONS.

Housekeeping

1. All surfaces shall be maintained as free as practicable of accumulations of inorganic arsenic.
2. Floors and other accessible surfaces contaminated with inorganic arsenic may not be cleaned by the use of compressed air and shoveling and brushing may be used only where vacuuming or other relevant methods have been tried and found not to be effective.
3. Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner to minimize the reentry of inorganic arsenic into the workplace.
4. A written housekeeping and maintenance plan shall be kept which shall list appropriate frequencies for carrying out housekeeping operation, and for cleaning and maintaining dust collection equipment. The plan shall be available for inspection.
5. Periodic cleaning of dust collection and ventilation equipment and check of their effectiveness shall be carried out to maintain the effectiveness of the system and a notation kept of the last check of effectiveness and cleaning or maintenance.

Medical Surveillance

The employer shall institute a medical surveillance program will be instituted for the following employees:

1. All employees who are or will be exposed above the action level, without regard to the use of respirators, at least 30 days per year; and
2. All employees who have been exposed above the action level, without regard to respirator use, for 30 days or more per year for a total of 10 years or more of combined employment with the employer or predecessor employers.
3. All medical examinations and procedures will be performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place.

The initial medical examination will include at least the following elements:

1. A work history and a medical history which shall include a smoking history and the presence and degree of respiratory symptoms such as breathlessness, cough, sputum production and wheezing.

A medical examination which shall include at least the following:

1. A standard posterior-anterior chest x-ray.
2. A nasal and skin examination; and
3. Other examinations which the physician believes appropriate because of the employees' exposure to inorganic arsenic or because of required respirator use.

Periodic examinations.

1. Examinations must be provided at lease annually.
2. Whenever a covered employee has not taken the examinations specified above within six (6) months preceding the termination of employment, he/she shall be provided such examinations upon termination of employment.

Additional Examinations

If the employee for any reason develops signs or symptoms commonly associated with exposure to inorganic arsenic the employer shall provide an appropriate examination and emergency medical treatment.

The following information shall be provided to the examining physician:

1. A copy of this standard and its appendices.
2. A description of the affected employee's duties as they relate to the employee's exposure.
3. The employee's representative exposure level or anticipated exposure level.
4. A description of any personal protective equipment used or to be used; and
5. Information from previous medical examinations of the affected employee which is not readily available to the examining physician.

Physician's Written Opinion

A written opinion from the examining physician provided to our Safety Director must include:

1. The results of the medical examination and test performed.
2. The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employees' health from exposure to inorganic arsenic.
3. Any recommended limitations upon the employee's exposure to inorganic arsenic or upon the use of protective clothing or equipment such as respirators; and
4. A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further explanation or treatment.

The physician may not to reveal in the written opinion specific finding or diagnoses unrelated to occupational exposure.

A copy of the written opinion shall be provided to the affected employee.

An accurate record for each employee subject to medical surveillance must be established and maintained.

a. This record will include:
    1. The name, social security number, and description of the duties of the employee.
    2. A copy of the physician's written opinions and an explanation sheet for biological monitoring results.
    3. A copy of the medical history, and the results of any physical examination and all test results that are required to be provided by this section, including

biological test, X-rays, pulmonary function test, etc., or that have been obtained to further evaluate any condition that might be related to inorganic arsenic exposure.

4. Results of any airborne exposure monitoring done on or for that employee and provided to the physician; and
5. Any employee medical complaints related to exposure to inorganic arsenic.
6. A copy of the information provided to the physician as required by 29 CFR 1910.1018.

Recordkeeping

This program [our written procedures] as well as all records required to be maintained by 29 CFR 1910.1027(n), Recordkeeping, will be made available, upon request, to affected employees, former employees, and their designated representatives, and to Human Resources and the Safety Director for examination and copying.

Availability of records

Upon request, Human Resources will make any **exposure records** required by 29 CFR 1910.1018, *Inorganic arsenic*, available for examination and copying to affected employees, former employee's, designated representatives, and Human Resources, in accordance with 29 CFR 1910.1020.

Hygiene Facilities and Practices

For employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic, clean change areas equipped with storage facilities for street cloths and separate storage facilities for protective clothing and equipment in shall be provided per 29 CFR 1910.141(e)

Showers

The employer shall assure that employees working in regulated areas or subject to the possibility of skin or eye irritation from inorganic arsenic shower at the end of the work shift.

Shower facilities will be provided in accordance with 1910.141(d)(3)(i) through (d)(3)(v).

Lunchrooms

For employees working in regulated areas, lunchroom facilities which have a temperature controlled, **positive pressure, filtered air supply**, and which are readily accessible to employees working in regulated areas will be provided.

Employees working in the regulated area or subject to the possibility of skin or eye irritation from exposure to inorganic arsenic **must** wash their hands and face prior to eating.

Lavatory facilities which comply with 1910.141(d)(1) and (2) will be provided.

Facilities for employees working in areas where exposure, without regard to the use of respirators, exceeds 100 ug/m³ will be provided to vacuum their protective clothing and clean or change shoes worn in such areas before entering change rooms, lunchrooms or shower rooms.

Employees **may not allow exposure** to skin or eye contact with arsenic trichloride, or to skin or eye contact with liquid or particulate inorganic arsenic which is likely to cause skin or eye irritation.

Respiratory Protection

Where engineering and work practice controls are not sufficient to reduce exposure to or below the permissible exposure limit, they shall nonetheless be used to reduce exposures to the lowest levels achievable by these controls and shall be supplemented by the use of respirators.

Respirators must be used during:

1. Periods necessary to install or implement feasible engineering or work-practice controls.
2. Work operations, such as maintenance and repair activities, for which the employer establishes that engineering and work-practice controls are not feasible.
3. Work operations for which engineering, and work-practice controls are not yet sufficient to reduce employee exposures to or below the permissible exposure limit.
4. Emergencies.

Respirator Program

Employees will fall under the provisions of our respiratory protection program in accordance with 1910.134(b) through (d) (except (d)(1)(iii)), and (f) through (m).

If an employee exhibits breathing difficulty during fit testing or respirator use, they must be examined by a physician trained in pulmonary medicine to determine whether they can use a respirator while performing the required duty.

Respirator Selection Special Requirements

Employees may not use half mask respirator for protection against trichloride because it is absorbed rapidly through the skin.

HEPA filters for powered and non-powered air-purifying respirators will be provided.

Appropriate Respirators for Employee Use:

1. Air-purifying respirators that have a combination HEPA filter with an appropriate gas-sorbent cartridge or canister when the employee's exposure exceeds the permissible exposure level for inorganic arsenic and the relevant limit for other gases.
2. Front-or back-mounted gas mask equipped with HEPA filters and acid gas canisters or any full facepiece supplied-air respirators when the inorganic arsenic concentration is at or below 500 mg/m^3, and half mask air-purifying respirators equipped with HEPA filters and acid gas cartridges when the inorganic arsenic concentration is at or below 100 ug/m^3.
3. Employees required to use respirators may choose, and the employer must provide, a powered air-purifying respirator if it will provide proper protection. In addition, the employer must provide a combination dust and acid-gas respirator to employees who are exposed to gases over the relevant exposure limits.

Gases, Vapors, Fumes, Dusts, and Mists Compliance Program for Construction

Purpose

The purpose of this program is to inform interested persons, including employees, that SEI Solutions is complying with OSHA's Gases, Vapors, Fumes, Dusts, and Mists standard, Title 29 Code of Federal Regulations 1926.55 and other OSHA rules as needed to ensure that no employee is exposed to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists found in Appendix A of 29 CFR 1926.55.

To comply we must first implement all feasible administrative and engineering controls. However, when such controls are not feasible, we will use protective equipment or other protective measures to keep the exposure of employees to air contaminants within the limits prescribed in Appendix A of 29 CFR 1926.55. All equipment and technical measures used to achieve compliance will first be approved for each particular use by a competent industrial hygienist or other technically qualified person.

This program applies to all construction work (including alteration, repair, painting, and cleaning) where one of our employees may be occupationally exposed to gases, vapors, fumes, dusts, and mists at concentrations above those specified in Appendix A of 29 CFR 1926.55.

Administrative Duties

The Safety Manager is the program coordinator/manager and is responsible for its implementation. Copies of the written program may be obtained at the Safety Manager's Office.

Exposure Assessment & Monitoring

We conduct personal or area sampling for gases, vapors, fumes, dusts, and mists to measure worker exposures. Air sampling is needed to measure worker exposures and select appropriate engineering controls and respiratory protection. Where data is collected it must be retained to support negative exposure assessments.

We will perform air monitoring as needed to measure the effectiveness of controls.

The current OSHA permissible exposure limit (PEL) for respirable dust containing crystalline silica (quartz) is measured by millions of particles per cubic foot (mppcf) and is calculated as:

PEL = (250 mmpcf) / (% silica + 5)
Note: PEL is an 8 hour time-weighted average (TWA).

Each employee shall use a portable gas detector as required in all high gas hazard areas.
All gas monitor will be calibrated per manufacturer's recommendations and contain a current calibration sticker on the monitor providing the date of calibration. Bump test are required to be completed at the beginning of each day the monitor is in use per the requesting owner client and manufacturer's guidelines to ensure the monitor is functioning correctly.

Medical Surveillance

Although we understand that medical examinations should always supplement effective gas, vapor, fume, dust, and mist monitoring and controls, and never substitute for them, we provide medical examinations for all workers who may be exposed to the following gases, vapors, fumes, dusts, or mists at or above their respective PEL found in 29 CFR 1926.55:
(enter your answer)

These medical examinations are provided:

- Prior to job assignment and annually thereafter (or every two years if a physician determines that is sufficient.);
- At termination of employment;
- Before reassignment to an area where medical examinations are not required;
- If the examining physician believes that a periodic follow-up is medically necessary;
- As soon as possible for employees injured or becoming ill from exposure to hazardous substances during an emergency, or who develop signs or symptoms of overexposure from hazardous substances.

> Note: The National Institute for Occupational Safety and Health (NIOSH) recommends that examinations must occur before job placement or upon entering a trade, and at least every three years thereafter.

The examinations must occur before job placement or upon entering a trade, and at least every three years thereafter (NIOSH recommendation). Examinations will include at least the following:

- A medical and occupational history to collect data on exposure and signs and symptoms of respiratory disease.
- A chest X-ray classified according to the 1980 International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses.
- Pulmonary function testing (spirometry).
- An annual evaluation for tuberculosis.
- Availability of air and medical surveillance data to workers is an OSHA requirement (29 CFR 1926.33).

Recordkeeping

We know recordkeeping is critical for our gases, vapors, fumes, dusts, and mists operations. Our recordkeeping tasks, at a minimum, include:

- Employee exposure measurements according to chemical-specific regulations and 29 CFR 1926.33 and 29 CFR 1910.1020;
- Medical surveillance records measurements according to chemical-specific regulations and 29 CFR 1926.33 and 29 CFR 1910.1020;
- Training records;
- Required notification records according to chemical-specific regulations.

Training

SEI Solutions will assure that all employees are trained in Gas Hazards before initial assignment and annually thereafter.
Gas Hazard Awareness training will include at a minimum:
a. Locations of alarm stations
b. Gas Monitoring Equipment- Portable and Fixed Detection
c. Gas Alarms
d. Gas Hazards- Characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide at a minimum. Hazard training must also include any plant or department specific gases of concern. Training must include signs and symptoms of overexposure
e. Personnel Rescue Procedures
f. Use and care of Self-Contained Breathing Apparatus (SCBA)- includes donning and emergency procedures (if applicable)
g. Evacuation Procedures
h. Staging Areas – Primary and Secondary

SEI Solutions will assure that all employees are trained in Dust Hazards before initial assignment and annually thereafter.
We will provide our workers with training that includes but is not limited to:

- Information about the potential health effects of exposure to crystalline silica.
- Material safety data sheets for silica, masonry products, alternative abrasives, and other hazardous materials (29 CFR 1926.59)
- Instruction about the purpose and set-up of regulated areas marking the boundaries of work areas containing crystalline silica.
- Information about safe handling, labeling, and storage of toxic materials.
- Discussion about the importance of substitution, engineering controls, work practices, and personal hygiene in reducing crystalline silica exposure.
- Instruction about the use and care of appropriate protective equipment (including protective clothing and respiratory protection).

All of the above training will be documented and available for review.

Methods of Compliance

This section contains our description of the specific means that we will employ to achieve compliance with the requirements of 29 CFR 1926.27, .51, .55. .95, .100 - .105, and .200.

Administrative procedures, engineering controls, and good work practices

Exposures to gases, vapors, fumes, dusts, and mists can be controlled through the use of engineering controls and work practices. Engineering controls are hazard controls designed into equipment and workplaces. Work practices are procedures followed by employers and workers to control hazards. Some of the engineering controls and work practices we may use during work that generate gases, vapors, fumes, dusts, and mists are:

- Recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Awareness and planning are keys to prevention of silicosis.

- Use dust collection systems available for many types of dust-generating equipment. When purchasing equipment, our priority will be equipment that contains dust control methods.

- During rock drilling, use water through the drill stem to reduce the amount of dust in the air, or use a drill with a dust collection system.

- When sawing concrete or masonry, use saws that provide water to the blade.

- When available, use local exhaust ventilation systems to prevent dust from being released into the air.

- When doing abrasive blasting, substitute less hazardous materials than silica sand or other substances containing more than 1% crystalline silica.

- Use engineering controls and containment methods, such as blast-cleaning machines and cabinets, wet drilling, or wet sawing of silica-containing materials to control the hazard and protect adjacent workers from exposures.

Hygiene Facilities & Practices

The following personal hygiene practices are essential for protecting our workers from gases, vapors, fumes, dusts, and mists:

- Do not eat, drink, or use tobacco products in dusty areas.

- Wash your hands and faces before eating, drinking, or smoking outside dusty areas.

- Park cars where you will not be contaminated with silica and other substances such as lead.

- Practice good personal hygiene to avoid unnecessary exposure to other work site contaminants such as lead.

- Shower (if possible) and change into clean clothes before leaving the work site to prevent contamination of cars, homes, and other work areas.

Housekeeping

Our housekeeping practices include:

Housekeeping must be done often and it must be done properly. For example, you don't want to dry sweep dust into a dust pan; this puts some of the dust back into the air. You may choose to use vacuums with high-efficiency particulate air (HEPA) filters, or use wet sweeping instead of dry sweeping. When removing dust from equipment, use a water hose rather than compressed air.

Again, check the chemical-specific regulation, if existent, for housekeeping specifics.

Protective Clothing

We will take the following steps to assure that gas, vapor, fume, dust, and mist work clothing do not contaminate cars, homes, or work sites outside the dusty area:

- Change into disposable or washable work clothes at the work site.
- Shower and change into clean clothes before leaving the work site.

Respiratory Protection

We know the OSHA regulation requires us to implement a respirator program when engineering, administrative, and good work practices are not enough to keep gases, vapors, fumes, dusts, and mists below their permissible exposure limit (PEL) as found in 29 CFR 1926.55. We will not use respirators as the primary means of preventing or minimizing exposures to airborne contaminants. Instead, we will use effective source controls such as:

- Substitution,
- Automation,
- Enclosed systems,
- Local exhaust ventilation,
- Wet methods, and
- Good work practices.

Such measures will be the primary means of protecting our workers. However, when source controls cannot keep exposures below the PEL, controls will be supplemented with the use of respirators in accordance with 29CFR 1910.134. See our Respiratory Protection Program for additional details.

Communication of Hazards

We will post warning signs to mark the boundaries of work areas contaminated with gases, vapors, fumes, dusts, and/or mists at or above their PELs.

SEI Solutions will ensure all employees are aware of the Owners contingency plan provisions including evacuation routes and alarms. Employees should participate in emergency evacuation drills and practice rescue procedures.

Our Communication of Hazards program is supplemented by the requirements of 29 CFR 1926.59-Hazard Communication. See this program for further instructions.

Spill Prevention and Response

1. Purpose

The purpose of this plan is to document spill prevention and response requirements. Due to the type of work and the materials involved, many activities carried out by SEI Solutions have the potential for accidental spills. The following standard operating procedures apply to spill prevention and response. Contact SEI Solutions Safety Director @ (219) 250-0825, any time a spill occurs.

2. Scope

This procedure applies to all SEI Solutions operations. When work is performed on a non-owned or client's site, the client's program shall take precedence. However, this document covers SEI Solutions employees and Sub-Contractors and shall be used on owned premises, or when a client's program doesn't exist or is less stringent.

3. Definitions

Minor Spills: Small quantities of oil, gasoline, paint, or other material that are small enough to be controlled by a first responder upon discovery of the spill.

Semi-Significant Spills: Spills that can be controlled by a first responder with help from other SEI Solutions personnel.

Significant or Hazardous Spills: Spills that cannot be controlled by SEI Solutions personnel.

SPILL RESPONSE

In the event of a hazardous substance spill or release, immediately review and follow applicable OSHA SDS guidelines. If doing so does not violate those guidelines, take the following measures to keep the spill from entering sewer or storm drains, spreading off-site, or affecting human health. In all cases caution and common sense must be maintained with the primary goal being to prevent and/or

limit personal injury. In the event of a spill, contact George Humphrey, SEI Solutions Safety Director @ (219) 250-0825 immediately.

CLEAR THE AREA

Clear the location of all persons except those responding to the spill.

DETERMINE EXTENT OF SPILL

Determine the nature of the spill, its size and the source. Use the SDS sheets to determine the seriousness of the spill and type of precautions necessary to respond.

4. Spill Prevention

Hazardous Substance Management

All hazardous substances, including chemical wastes, are to be managed in a way that prevents release. The following general requirements shall be followed:

Container Management

- Keep work areas neat and organized.
- Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes but not limited to, clean and organized storage, labeling, and secondary containment where necessary.
- Maintain Safety Data Sheet (SDS) for each hazardous chemical.
- Provide tight fitting lids for all containers.
- Keep containers clearly marked per labeling requirements.
- Store containers, drums, and bags away from major traffic routes.
- Inspect storage containers regularly for signs of leakage or deterioration.
- **IMMEDIATELY** replace or repair leaking storage containers.
- Use care when transferring from one container to another.

- Use powered equipment or get assistance when moving materials to and from a storage area. Use care to prevent puncturing containers with the equipment.

Housekeeping

- Chemical substances should be stored in proper containers to minimize the potential for a spill. Whenever possible, chemicals shall be kept in closed containers and stored so they are not exposed to stormwater.
- Do not wash down or hose down any outdoor work areas or trash/waste container storage area except where wash water is captured and discharged into the sanitary sewer (if approved).
- Conduct periodic inspection to ensure that materials and equipment are being handled, disposed/recycled, and stored correctly.
- Provide adequate spill kits for trucks/job sites with sufficient equipment and supplies necessary for each work area where the potential for spills or leaks exists.
- Inspect each spill kit or locker regularly and after each spill response. Replace any spent supplies or repair any equipment that is worn or not suitable for service.
- Stock adequate personal protective equipment.

Spill Response Equipment

Spill response equipment must be maintained and located in areas where spills are likely to occur. Spill kits should provide adequate response capabilities to manage any anticipated spill or release. The following general requirements shall be followed:

- Stock spill clean-up kits that are compatible with the hazardous substances stored on site.

- Locate spill kits in areas where spills are likely to occur (loading docks, chemical storage areas, locations where hazardous substance are being transferred).
- Spill kits should be sized to manage an anticipated release (spill equal to the largest container).
- Emergency response equipment should be inspected periodically to ensure that the spill kit is complete.

5. Spill Response

In the event of a hazardous substance spill or release, immediately review and follow applicable OSHA and SDS guidelines. If doing so does not violate those guidelines, take the following measures to keep the spill from entering sewer or storm drains, spreading off-site, or affecting human health. In all cases caution and common sense must be maintained with the primary goal being to prevent and/or limit personal injury. In the event of a spill please contact George Humphrey, SEI Solutions Safety Director @ (219) 250-0825 IMMEDIATELY.

Stop, contain, and clean up the chemical spill if:

- The spilled chemical and its hazardous properties have been identified.
- The spill is small and easily contained.
- Responder is aware of the chemicals' hazardous properties.

If a spill or release cannot be controlled or injuries have occurred due to the release, the following procedures should be implemented:

- Call for help and alert others of the release.
- Evacuate immediate area and provide care to the injured- Call plant emergency services or 911 if applicable.
- If potential fire or explosion hazards exists, initiate evacuation procedures.
- Respond defensively to any uncontrolled spills:

- Use appropriate personal protective equipment when responding to any spill.
- Attempt to shut off the source of the release (if safe to do so).
- Eliminate sources of ignition (if safe to do so).
- Protect drains by use of adsorbent, booms or drain covers (if safe to do so).

- Notify onsite emergency contact(s).
- Notify other trained staff and assist with the spill response and cleanup activities.
  - Coordinate response activities with local emergency personnel (fire department).

Clear the location of all persons except those needed to deal with the spill.

Consider safety at all times. Anticipate and avoid all likely hazards. Never approach, contact, or sample an unknown substance. If a highly toxic or flammable substance is discovered, employees should leave the immediate area and contact Safety. If there is any question about a substance, contact the appropriate identified response authority or other designated representative at your facility or jobsite.

PROCEDURES

- Stop the leading edge of the spill. Block or divert the spill to avoid discharge to the storm sewer system and to minimize the area requiring cleanup.
- Determine the source of the spill and stop the spill at its source by closing a valve, plugging a leak, or settling a container upright. Transfer material from a damaged container.
- Identify the material and volume spilled. Contact the appropriate identified response authority or other designated representative if you cannot identify the material and its properties.
- Refer to the SDS to determine appropriate personal protective equipment, such as gloves and safety glasses. And appropriate cleanup methods.

- Clean up spill immediately to prevent spreading of wastes by wind, rain, and vehicle traffic and potential safety hazards.
- Use sand absorbent, socks, pillows, or pads to quickly capture spilled liquid and properly dispose of all clean-up materials. Use dry clean-up methods only.
- All spill response material must be segregated and containerized. Do not mix spill pads and pillows with granular absorbent, etc. Do not mix contaminated disposable personal protective equipment (i.e., gloves, shoe covers, coveralls, etc.) with other spill response clean-up debris. Do not mix contaminated spills with anything else. (Safety Director will advise)
- Complete all necessary reports.

6. SPILL REPORTING

There are certain hazardous substances listed in 40 CFR 302.6 by the U.S. Environmental Protection Agency that require immediate notification to local, state or federal authorities in the event of a spill. In cases of this type, contact George Humphrey Safety Director (219) 250-0825 who will handle the required notification.

Should a spill occur immediately contact the following:

1. The onsite facility personnel contact
2. Jason Trinks @ (219) 764-9800
3. Lance Hodge @ (219) 764-9800
4. George Humphrey (219) 250-0825
5. On Site Security if required by the facilities procedures
6. Should #5 not apply call the forwarding
    A. Fire Department
    B. Ambulance if any injuries
    C. Police

Your contact for the site-specific project is of the top priority

7. EMPLOYEE TRAINING

All employees shall receive periodic training on the following topics:

- Spill prevention practices
- Where to locate and how to interpret OSHA, SDS and Pictograms
- Spill response plan
- Emergency response procedures

All SEI Solutions employees will be trained on proper communication, techniques to avoid a spill and spill response. Training shall include spill containment, use of absorbents, and proper disposal techniques based on possible chemicals utilized on projects.

DISPOSAL

Absorbents-Cleaning up spills and releases of chemicals and petroleum products generally involves the use of materials such as kitty litter type substances (known as "quick dry," "speedi dry," or "oil dry"), clay absorbent, pads, pillows, booms, towels, and other such absorbent materials. Sawdust is also sometimes used as an absorbent. Used absorbents, therefore, may be subject to the hazardous waste requirements under the Resource Conservation and Recovery Act if: (1) they are contaminated with a hazardous material (e.g., solvents or gasoline), or (2) they exhibit a hazardous waste characteristic such as ignitability, reactivity, toxicity or corrosivity

Pandemic Disease Plan

PURPOSE

1.1 Business continuity means ensuring that essential business functions can survive a natural disaster, technological failure, human error, or other disruption. Many existing business continuity plans anticipate disruptions such as fires, earthquakes, and floods. These events are restricted to certain geographic areas and the time frames are well defined and limited. Pandemic disease, however, demands a different set of continuity assumptions since it will be widely dispersed geographically and potentially arrives in waves that could last several months at a time.

SCOPE

2.1 This Pandemic Disease Plan applies to all employees.

ASSIGNMENT OF OWNERSHIP

3.1 A pandemic disease plan or disease containment plan is developed for SEI Solutions and a coordinator appointed. At time of a pandemic, SEI Solutions will identify a workplace coordinator who will be responsible for dealing with disease issues and their impact at the workplace. This may include contacting local health department and health care providers in advance and developing and implementing protocols for response to ill individuals.

ASSUMPTIONS

4.1 A pandemic disease will spread rapidly and easily from person to person, affecting all businesses due to absenteeism. Businesses that are relied upon by other businesses will be facing the same massive absentee rates and will be unable to provide essential components to maintain the daily operations.

Risk assessments to identify the essential/critical components of our business operation shall be conducted.

4.2 Recognizing a pandemic includes:

- Healthcare services not being available (they are already full at present with the usual ailments).
- Schools, churches, and other public places not being open.
- Borders are partially or fully closed, especially airports, leaving people (our families, employees, business partners, customers, and suppliers) “stranded”.
- Essential materials and supplies may be limited due to distribution chains that are affected by the travel restrictions or absentee workers supporting those transportation means.
- Essential services around utilities, food distribution/access and banking systems may not be at “normal levels”; access to cash flow could be tight.

- People may not be willing to or able to come to work.

EFFECTIVE INTERNAL EMPLOYEE COMMUNICATION PROCEDURE

5.1 Communications during a pandemic involves both internal communications and external communications. Internal communication will be provided to employees to educate them about pandemic diseases and measures they can take to be prepared.

Key contacts, a chain of communications and contact numbers for employees, and processes for tracking business and employee's status shall be developed.

Risk communication is critical to inform employees regarding changes in the pandemic status. The following is one method for providing such information.

- ***Alert:*** conveys the highest level of importance; warrants immediate action or attention.
- ***Advisory:*** provides key information for a specific incident or situation; might not require immediate action.
- ***Update:*** provides updated information regarding an incident or situation; unlikely to require immediate action.

Provide continuous updates through internal & external communications when a pandemic is imminent.

- Provide continuous updates through internal & external communications when a pandemic is imminent.
- Provide frequent updates about the pandemic status
- Provide advisories and alerts as conditions change
- Ensure vendors and suppliers have available a dedicated communications contact
- Monitor local, state, and federal pandemic updates

We will use our phone systems that can perform automatic dialing from a database with each employee contact number to send notifications and messages about alerts. The use of the company website also will serve as a portal for sharing information with employees and vendors.

EFFECTIVE EXTERNAL/CUSTOMER COMMUNICATION PROCEDURE

6.1 A procedure shall be developed to notify key contacts including both customers and suppliers in the event an outbreak has impacted SEI Solutions ability to perform services. This procedure must also include notification to customers and suppliers when operations resume.

BUSINESS CONTINUITY PLANNING

7.1 Business continuity plans should be prepared so that if a large or significant absenteeism of personnel become ill or changes in business practices are required business operations can be effectively maintained.

7.2 **Command Staff:**

Incident Commander (President/CEO)	Organizes and directs all aspects of the incident response
Public Information Officer (Media/Public Relations)	Creates and releases upon approval from the incident commander all information to the staff, media and public.
Liaison Officer (Vice President)	Establishes and maintains relationships with outside organizations
Safety Officer (Safety Directo)	Ensures the safety of all persons involved with the pandemic

Operations Section:

Operations Section Chief (Director of Operations)	Initiates and manages ongoing operations throughout a pandemic

Logistics Section:

Logistics Section Chief (Purchasing/Inventory Manager)	Meets the goods, services, and staffing needs of the operation during the pandemic

Planning Section:

Planning Section Chief (Lead Administrator)	Collects information and resources potentially relevant to the pandemic and company operations

Finance Section:

Finance Section Chief (Purchasing/Accounting Manager)	Monitors all expenditures and ensures fiscal resource availability during the pandemic

PANDEMIC RESPONSE BY PANDEMIC PHASE

8.1 Currently the World Health Organization (WHO) has created various phases.

Level 0 (WHO Phase 3) - Novel virus alert- not human-to-human transmission

Level 1 (WHO Phase 4) - Confirmed cases of human-to-human transmission of novel disease virus.

Level 2 (WHO Phase 5) - Suspected/confirmed cases in the local area.

Level 3 (WHO Phase 5) - Numerous suspected/confirmed cases in the local area.

WORK/STAY HOME POLICY

9.1 Flexible work policies should be developed as possible. Workers should be encouraged to stay at home when ill, when having to care for ill family members, or when caring for children when schools close, without fear of reprisal. Tele-commuting or other work-at-home strategies should be developed.

INFECTION CONTROL MEASURES

9.1 Guidelines for infection control are important to clarify the routes of transmission and the ways to interrupt transmission through measures of hygiene. Infection control is an essential component of pandemic management and a component of public health measures. Essential measures include:

- Hand washing and use of hand sanitizers should be encouraged by SEI Solutions supervision. Hand washing facilities, hand sanitizers, tissues, no touch trash cans, hand soap and disposable towels should be provided by SEI Solutions.
- Workers are encouraged to obtain appropriate immunizations to help avoid disease. Granting time off work to obtain the vaccine will be considered when vaccines become available in the community.
- Limiting large or crowded gatherings of personnel if an outbreak or increased level of disease is in progress - Social distancing including increasing the space between employee work areas and decreasing the possibility of contact by limiting large or close contact gatherings should be considered.
- Equipment and/or working surfaces shall be cleaned periodically. Clean all areas that are likely to have frequent hand contact (like doorknobs, faucets, handrails) periodically and when visibly soiled. Work surfaces should also be cleaned frequently using normal cleaning products.
- Stay at home when you are sick. If possible, stay away from work, school and from running errands. You will help others from catching your illness.
- Cover your coughs and sneeze into tissue, or cough into your shirt sleeve.
- Enhance existing housekeeping service by wiping down and disinfecting work areas (i.e. keyboards, telephones, desks, etc.) frequently.
- Enhance housekeeping services for public use areas several times throughout the work period.

- Use personal protective equipment where appropriate to minimize exposure (i.e. gloves- for handling money, masks- for ill employees)

IMPLEMENTATION, TESTING AND REVISION

10.1 The Pandemic Plan is reviewed and/or tested. The plan and emergency communication strategies should be periodically tested to ensure it is effective and workable.

Testing the plan will be accomplished by conducting exercises. Exercises range from low stress to full scale, hands on drills. A tabletop exercise is the easiest way to begin testing the plan. This type of exercise involves having discussions regarding a scenario that challenges the plan and the decision makers during an emergency. Functional exercises take on an additional level of complexity, in that they require participants to conduct functional components of the plan. This usually involves planning specific scenarios, creating pretend data and present issues that target an area within the plan to be tested.

Each of these methods of testing the plan requires extensive planning for the exercise and the evaluation. The evaluation is critical to revising the plan, by capturing actual responses during the exercise or drill objectively. Once this data is captured, an after-action report with recommendations to revising the plan should be completed within a few weeks of the exercise.

IMPLEMENTING LESSONS LEARNED FOLLOWING AN EVENT

11.1 Following a pandemic event, the person responsible for implementation of the plan will identify learning opportunities and take action to implement any corrective actions.

A review of the plan's initiated actions completed will identify all action items that were taken versus and when the action items were to be completed via a gap analysis indicating when specific action items were to occur, and when actual completion dates were completed.

Input will be asked of our staff and management for what went well and what could be improved during the event. All findings that indicate where improvements can be made will be used as Lessons Learned process to modify this plan as required. Corrective actions will be assigned to specific management representatives as required. Implementation of the Lessons Learned will be communicated to all employees and a revised plan issued.

TRAINING

12.1 Employees will be trained on health issues of the pertinent disease to include prevention of illness, initial disease symptoms, preventing the spread of the disease, and when it is appropriate to return to work after illness. Disease containment plans and expectations should be shared with employees. Communicating information with non-English speaking employees or those with disabilities must be considered.

Nitrogen Awareness

Purpose

1.1 The purpose of this procedure is to advise employees in areas where nitrogen is being used and to supply an awareness level basis about the properties and hazards of nitrogen, general guidelines, and training requirements.

Scope

2.1 This procedure applies to SEI Solutions LLC operations where employees whose work activities may involve working with or around nitrogen. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers SEI Solutions employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent

Responsibilities

3.1 **Managers and Supervisors**

- In coordination with the Safety Manager, develop and implement nitrogen awareness training.
- Ensure personnel are aware of work that has the potential of exposure to nitrogen.
- Identify possible locations where nitrogen in the workplace may be used.
- Inform the Safety Manager of upcoming work involving nitrogen, allowing the Safety Manager to provide any necessary monitoring or other required actions.
- Ensure employees comply with the nitrogen awareness requirements.

Safety Manager:

- Coordinate annual nitrogen awareness training activities.

Employees:

- Comply with the nitrogen awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.

Operations

4.1 Hazards of Nitrogen

Nitrogen is an inert gas, which means that it does not react with other chemicals under most normal circumstances. Nitrogen is often used in industrial settings to displace other gases that are toxic, corrosive, reactive or prevent fire or explosion hazards, making processes safer. Using nitrogen to remove oxygen from process equipment decreases the chances of a fire or explosion, but it also can make the atmosphere in and around the equipment hazardous for humans to breathe.

Hazard Identification

- Oxygen-deficient atmospheres in confined spaces can be deadly in only a few breaths. An oxygen deficient atmosphere rapidly overcomes the victim. There is no warning before being overcome.
- An oxygen-deficient atmosphere might exist outside a confined space opening.
- Entering oxygen-deficient atmospheres should never be attempted under any circumstances without training and proper air-supplied breathing equipment.
- Pre-job planning and walk downs with the entire work team should emphasize confined space entry restrictions, especially when unsecured confined space access points are in the work area.
- Confined space hazard warnings must be maintained at all times while the access opening is not secured.
- Pre-job walk downs should accurately identify all equipment where inert gas purging may be venting into the work area.
- Barriers and warnings should be maintained around open purge vents at all times during purging activities.
- Rescuers must strictly follow safe rescue procedures.

Pre-Job Planning for Nitrogen Related Work

Pre-job planning or a site assessment will be conducted prior to starting work and that the assessment will be documented on a Job Safety Analysis Form. Documented planning will be conducted for those operations involving potential nitrogen exposure and this includes anytime an active purge is being applied to a system in or around equipment associated with work. Some planning or assessment elements include:

- All proposed work requires a jobsite visit by the requestor and a unit operator to identify special precautions, equipment status, and personal safety equipment requirements.
- The Job Safety Analysis must clearly identify all hazards and special personal protective equipment requirements.
- “Fresh Air” work restrictions apply to “Set up only” permits whenever an IDLH atmosphere is suspected or known to be present in the work area.
- The requirements to maintain posted warnings at all access points to confined space temporary openings.
- Appropriate barricades will be utilized if determined by the site assessment. As determined by the hazard assessment, nitrogen vent / purge points will be labeled and barricaded. Barricades will provide a safe zone of 3' in diameter or greater if determined by oxygen monitoring results. As determined by the hazard assessment, nitrogen vent / purge points will be labeled and barricaded with a 3' diameter or as determined by oxygen monitoring (must be greater than 19.5% outside of the barrier.)
- Appropriate signage will be utilized and adhered to. Appropriate signage will include adequate warning by stating Danger, Inert Gas Present or Possible Oxygen Deficient Environment.

Safe Rescue Awareness

- The powerful human instinct to help someone in distress, especially a friend or co-worker, all too frequently results in multiple confined space incident victims.
- Workers suddenly involved in emergency activities must not allow emotions to override safe work procedures and training. Only qualified and trained personnel equipped with the necessary safety equipment should attempt a rescue.

Cylinder Handling and Storage

- All nitrogen cylinders shall contain an identifying label. Nitrogen cylinders shall contain an identifying label UN1066. See below as an example:

- Proper handling and storage of nitrogen cylinders includes the requirements that the cylinder(s) shall be upright, properly supported and stored outdoors or in a well-ventilated area. Cylinder(s) shall be chained or otherwise secured to prevent movement.
- Data sheets must be available for nitrogen.
- A protective cap must be in place when the cylinder is not in use.
- The correct size and type of trolley or cart should always be used for the safe transportation of gas cylinders.
- Nitrogen must not be used to power pneumatic tools or blowers. Nitrogen must not be used to power pneumatic tools or blowers except when they are used in an inert atmosphere

Training

5.1 Employees will be trained in nitrogen hazards. SEI Solutions shall provide training for all affected employees including any SEI Solutions employee working with or near nitrogen and the training shall emphasize:

- An oxygen-deficient atmosphere rapidly overcomes the victim.
- There is no warning before being overcome.
- An oxygen-deficient atmosphere might exist outside a confined space opening.
- Rescuers must strictly follow safe rescue procedures.

Documentation of training - Nitrogen awareness training shall be documented including dates of training, location of training, employee name and trainer name.

Training records shall be provided upon request all materials relating to the employee information and training program to regulatory agencies.

5.15
Silica

1. Purpose

The purpose of an exposure control plan (ECP) is to explain the approach SEI Solutions LLC. will take to protecting workers from harmful exposure to airborne silica dust.

A combination of control measures may be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control technologies available, and to ensure that the best practices, as described in this ECP, are followed.

The work procedures we establish will protect not only our employees but other possible effected personal. These guidelines are designed to be used as per project when the need for a control plan may exist.

2. Applicability

Applies to all SEI Solutions, LLC. employees who may be required to work with or near silica in the scope of their job duties and assignments.

3. Policy

It is the policy of SEI Solutions LLC. To provide a safe and healthy place to work. Due to the significant risk posed by respirable silica, it is critical that all personnel involved in operations that could potentially create silica dust take specific action to ensure that, as much as possible, a hazard is not created.

4. Responsibilities

4.1. Administration and Safety Department shall be responsible for:

4.1.1. Substitution of less hazardous products for those that contain crystalline silica is required.

4.1.2. Ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., employee training materials) required to fully implement and maintain this

exposure control plan (ECP) are readily available where and when they are required. Review is required annually or as necessary if equipment changes are made or exposure to silica has occurred.

4.1.3. Provide technical support to departments and employees when questions arise with regards to Silica safety.

4.1.4. Providing a job specific ECP for each project as need warrants; which outlines in detail the work methods and practices that will be utilized. Considerations for the plan should include:

4.1.4.1. Availability and delivery of all required tools/equipment

4.1.4.2. Scope and nature of grinding work to be conducted.

4.1.4.3. Control methods to be used and level of respiratory protection required.

4.1.4.4. Conducting a periodic review of the effectiveness of the ECP. This would include a review of the available dust-control technologies to ensure these are selected and used when practical.

4.1.4.5. Initiating sampling of worker exposure to concrete dust when there are non-standard work practices for which the control methods to be used have not been proven to be adequately protective.

4.1.4.6. Ensuring that all required tools, equipment, and personal protective equipment are readily available and used as required by the ECP.

4.1.5. Ensuring supervisors and employees are educated and trained to an acceptable level of competency.

4.1.6. Maintaining records of training, fit-test results, crew talks, and inspections (equipment, PPE, work methods/practices).

4.1.7. Coordinating the work with the prime contractor and other employers to ensure a safe work environment.

4.1.8. Are responsible to see that all provisions of this procedure are followed and that signaling operations are performed and the equipment is in safe operating condition.

4.2. Supervisors are responsible for the following:

4.2.1. Obtaining a copy of the ECP from the employer and making it available at the worksite.

4.2.2. Selecting, implementing, and documenting the appropriate site-specific control measures.

4.2.3. Providing adequate instruction to workers on the hazards of working with silica-containing materials (e.g., concrete) and on the precautions specified in the job-specific plan covering hazards at the location.

4.2.4. Ensuring that workers are using the proper respirators and have been fit-tested, and that the results are recorded.

4.2.5. Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled.

4.2.6. Communicating with the prime contractor and other sub-contractors to ensure a safe work environment.

4.3. Employees are responsible for the following:

4.3.1. Knowing the hazards of silica dust exposure.

4.3.2. Using the assigned protective equipment in an effective and safe manner.

4.3.3. Setting up the operation in accordance with the site-specific plan.

4.3.4. Following established work procedures as directed by the supervisor.

4.3.5. Reporting any unsafe conditions or acts to the supervisor.

4.3.6. Knowing how and when to report exposure incidents.

5. Properties of Silica

5.1. General Overview

Silica is the second most common mineral on earth and makes up nearly all of what we call "sand" and "rock." Silica exists in many forms—one of these, "crystalline" silica (including quartz), is the most abundant and poses the greatest concern for human health. Some common materials that contain silica include:

- Rock and sand
- Topsoil and fill
- Concrete, cement, and mortar
- Masonry, brick, and tile
- Granite, sandstone, and slate
- Asphalt (containing rock and stone)
- Fibrous-cement board containing silica.

5.2. Common Tasks That Can Generate Silica Dust

Silica is a primary component of many common construction materials, and silica-containing dust can be generated during many construction activities, including:

- Abrasive blasting (e.g., of concrete structures)
- Jackhammering, chipping, or drilling rock or concrete
- Cutting brick or tiles
- Sawing or grinding concrete
- Tuck point grinding
- Road construction
- Loading, hauling, and dumping gravel
- Demolition of structures containing concrete
- Sweeping concrete dust

Unprotected employees performing these activities, or working in the vicinity, can be exposed to harmful levels of airborne silica. Workers in other industries can also be exposed to silica, for example in the manufacture of toothpaste or pottery, or when loading coal (which can contain quartz) into the hold of a ship.

5.3. Health Hazards

5.3.1. Exposure to silica has been shown to cause silicosis, lung cancer, pulmonary tuberculosis and other airway diseases. Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.

5.3.2. A worker may develop any of three types of silicosis, depending on the concentrations of silica dust and the duration of exposure:

- Chronic silicosis—develops after 10 or more years of exposure to crystalline silica at relatively low concentrations.
- Accelerated silicosis—develops 5 to 10 years after initial exposure to crystalline silica at high concentrations.
- Acute silicosis—develops within a few weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica.

5.4. Symptoms of Exposure

5.4.1. Initially, workers with silicosis may have no symptoms; however, as the disease progresses, a worker may experience:

- Shortness of breath
- Severe cough
- Weakness

5.4.2. These symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

6. Best Practices

6.1. General

6.1.1. In general, there are two factors which are considered when addressing employee exposure to Silica. Limiting the amount of exposure is the first step. During the job planning this should be considered. Some work activities generate more dust than others, and the amount of exposure can be estimated using published resources are available that provide air sampling data and compare silica dust levels from various construction activities.

Limiting the duration of exposure is also important in protecting employees. During the job planning, consideration should be given to providing sufficient, qualified, and trained employees to allow rotation of employees to reduce the duration of exposure.

6.2. Control Options

6.2.1. The potential for employee exposure to silica should be identified during the job planning and hazard assessment phases of the project. If potential exposure risk is identified than effective control options must be used to eliminate or reduce the risk to workers from the hazards of silica dust exposure Employees must not be exposed to airborne concentrations of silica in excess of 0.025 mg/cubic meter over an 8-hour time period.

6.2.2. Effective control options must be used to eliminate or reduce the risk to employees from the hazards of silica dust exposure. The following hierarchy of control measures must be followed. We will reduce or eliminate employee exposure to silica dust by selecting a combination of the following controls listed in order of preference:

6.2.2.1. Elimination and substitution

6.2.2.2. Engineering

6.2.2.3. Administrative

6.2.2.4. Personal protective equipment

6.3. Elimination and Substitution

6.3.1. SEI recognizes the importance of planning the work in order to minimize the amount of silica dust generated. During the project planning phase, SEI will advocate for the use of methods that reduce the need for cutting, grinding, or drilling of concrete surfaces (e.g., formwork planning). Whenever possible, we will schedule work when concrete is still wet, because we know that much less dust is released at that time.

6.3.2. Elimination or Substitution (e.g., using products with less silica or using work methods that would eliminate the need for surface grinding) is the preferred control measure.

6.4. Engineering Controls

6.4.1. When Elimination or Substitution is not feasible, Engineering controls (e.g., water (wet method), local exhaust ventilation, and barriers /enclosure) shall be considered.

6.4.2. Selecting an appropriate engineering control measures depends on the specifics of the operation. In some cases, local exhaust ventilation (LEV) is more effective at controlling exposure (e.g., during grinding operations) than wetting methods. In a different application, wetting may be more effective (e.g., during cutting operations) than LEV. However, using LEV may reduce the amount of final cleaning required, as the silica dust is captured.

6.5. Engineering Controls of Dust

6.5.1. Overview of Local exhaust ventilation (LEV) systems.

These systems include a shroud (a suction casing that surrounds the wheel/stone), a hose attachment, and a vacuum system. The dust-laden air is collected within the shroud, drawn into the hose attachment, and conveyed the length of the corrugated hose to the vacuum, where it is filtered and discharged.

Many grinders can be purchased with LEV dust control attachments, which are uniquely designed for the equipment and the work activity (e.g., there are specific grinders with LEV manufactured for tuck point grinding). Where a shroud cannot be purchased for a grinder,

shrouds can be custom fabricated for grinders of all different sizes. For example, shrouds for corner and 90-degree areas can be fabricated or purchased.

Silica dust is very abrasive to LEV equipment, which must be regularly inspected for damage and properly maintained.

6.5.1.1. When LEV is used, SEI will employ the following systems and safe work practices:

- Vacuum attachment systems to capture and control the dust at its source whenever possible.
- Dust control systems (used regularly and well maintained).
- Grinding wheels operated at the manufacturers' recommended rpm (operating in excess of this can generate significantly higher airborne dust levels).
- Retrofit shrouds or exhaust cowlings for corner grinding; use manufacturer-specified rpm speeds and a well-maintained HEPA vacuum.
- Diamond stone grinders, which allow for the use of a more efficient suction casing on the grinder, whenever practicable.
- HEPA or good quality, multi-stage vacuum units approved for use with silica dust. [The vacuum units should be capable of creating a target airflow of at least 70 cfm. This should achieve a face velocity at the shroud of about 1.3 m/s (260 fpm)—the higher the face velocity, the more dust captured at source.]
- Work planning, so that concrete grinding can be completed when wet (dust release can be significantly reduced).
- Good housekeeping work practices (for example, use vacuums with high-efficiency particulate air (HEPA) filters, or use wet sweeping).
- Train workers and supervisors on how to properly use and maintain the equipment.

6.5.2. Overview of Wet methods for dust control

These systems are designed to apply water to the cutting or grinding surface to wet the surface and prevent the resulting dust from becoming airborne. Many construction tools/equipment types can be purchased with wet spray attachments. Water can also be manually applied to the concrete surface before and during the work (grinding, drilling,

cutting, etc).

Wetting is very effective at reducing dust release at the source and, in fact, may be more effective than local exhaust ventilation for slab and masonry cutting. A drawback to this method of dust control is that the dust is not collected—the wet slurry must be cleaned up so that the dust does not dry and become airborne.

Many of the tools used in concrete finishing can be fitted with wetting attachments. These grinders generally have smaller grinding surfaces that can be used in unique work locations such as window casements.

Water spray systems are available for both stationary and portable masonry and other concrete- or block-cutting tools (e.g., saws).

Work surfaces can also be wetted manually or using a water "mister" (e.g., during concrete chipping and jackhammering). A separate water supply system would have to be available on site from a plumbed facility or a portable pressurized tank.

Note Water spray can effectively reduce exposure levels but is not feasible in many applications (e.g., tuck point grinding and cutting fibrous cement board) because water can result in material discoloration and expansion, building damage, and waste water disposal problems.

Use of water spray controls presents potential safety hazards, which include electrocution, slipping, and potentially hypothermia.

6.5.2.1. When water spray systems are used, SEI will follow these safe work practices:

- Pneumatic grinders will be used instead of electric-powered grinders if water is the method of control.
- Pressure and flow rate of water will be controlled in accordance with tool manufacturers' specifications (for cutting saws, a minimum of 0.5 litres of water per minute [0.13 gallons/minute] should be used).
- When sawing concrete or masonry, we will use only saws that provide water to the blade.
- Wet slurry will be cleaned from work surfaces when the work is completed, using a wet vacuum or wet sweeping.

6.5.3. Barriers and enclosures

Barriers

Barriers are used to isolate the work area from the rest of the project and to prevent entry by unauthorized workers. They do not prevent dust drift and should only be used where natural ventilation is sufficient and dust release is controlled. Barriers will be constructed to notify other workers that concrete grinding work is underway and access to the immediate work zone is restricted to authorized personnel.

Enclosures

Enclosures can contain a dusty atmosphere. They can consist of a partial structure (poly draping or partial plywood hoarding) or a full enclosure equipped with some capacity for maintaining a lower than ambient pressure inside (negative pressure). For partial enclosures, airflow in the enclosure could be created by setting up a ventilating (blower) fan where the dusty air would be discharged to an unoccupied outdoor location. This option should only be used when dust levels are low or to supplement LEV or wet methods such as in stairwells.

Full enclosures can be fitted with a negative air unit that pumps air from inside the structure. Negative air units draw dusty air through a large HEPA filter panel before the air is discharged outside the enclosure. Another option to create airflow in the enclosure is to set up ventilating (blower) fans where the dusty air can be discharged to an unoccupied outdoor location.

Commercially available, collapsible (pop-up) enclosure structures are readily available in various sizes.

6.5.3.1. When barriers or enclosures are used in our work, we will follow these safe work practices:

- The site foreman will determine the type and design of barrier or enclosure (based on the work activity and the work area) and ensure it is constructed in accordance with the workplan. Barriers may be simple hazard-flagging ribbon or more restrictive hoarding.
- We will use commercially available negative air units when constructing a full enclosure.

6.6. Administrative Controls

6.6.1. When Elimination / Substitution or Engineering Controls are not feasible or will not complete

control the hazard then administrative controls should be implemented. The following administrative controls should be implemented:

6.6.1.1. Exposure control plans and the site risk assessment/work plan will be developed prior to the start of work.

6.6.1.2. Establish procedures for housekeeping, restricting work areas, personal hygiene, worker training, and supervision.

6.6.1.3. During project planning, we will assess when silica dust may be generated and plan ahead to eliminate or control the dust at the source. We recognize that awareness and planning are key factors in the prevention of silicosis.

6.6.1.4. Warning signs will be posted to warn workers about the hazards of silica and to specify any protective equipment required (for example, respirators).

6.6.1.5. Work schedules will be posted at the boundaries of work areas contaminated with silica dust.

6.6.1.6. Work that generates silica dust will be conducted after hours, when access to other unprotected workers cannot be restricted.

6.6.1.7. We will develop a site-specific exposure control plan to cover project-specific issues (e.g., scope of work, project location and site-specific hazards) and to be kept available at the worksite.

6.7. Personal Protective Equipment

6.7.1. Personal Protective Equipment shall be considered the last option and the last line of defenses again employee exposure. When determining the type of PPE required, both the exposure hazard to the material and the hazards presented by the task the employee will be performing must be addressed.

6.7.1.1. Respiratory protection

6.7.1.1.1. All employees who wear respirators will do so in adherence with SEI's respirator program.

6.7.1.1.2. Respirators must be selected based upon measured exposure levels and the assigned protection factor of respirators.

6.7.1.1.3. Only approved respirators will be used.

6.7.1.1.4. Workers who wear respirators will be clean-shaven. Filtering face piece respirators give little or no protection to workers with beards, and even a minor growth of stubble can severely reduce the effectiveness of respiratory protection.

6.7.1.1.5. All employees who wear respirators will be fit-tested.

6.7.1.1.6. Employees will be properly trained in the use of respirators, and a high standard of supervision, inspection, and maintenance will be followed.

6.7.2. Protective clothing

6.7.2.1. SEI will provide employees working in a restricted area with protective clothing that protects other clothing worn by the employee from silica contamination, ensuring that employees' street clothing is not contaminated by silica, and ensuring that an employee does not leave a restricted area until the employee has been decontaminated.

6.7.2.2. Personal protective equipment such as gloves, coveralls, and eye protection would be the minimum level of PPE to control Silica exposure.

6.7.2.3. SEI will be sure that the PPE provided is suitable to protect the employee from the

hazards the employee may be exposed to.

6.8. Evaluation of Control Effectiveness

It is critical that once all control systems are in place that the effectiveness of the controls are verified. In addition to work observations, health monitoring may be required.

7. Health Monitoring

7.1. Exposures to airborne concentrations of Silica must be kept below the permissible exposure limits shown in 29 CFR 1910.1000 Table Z-3.

7.2. Atmospheric monitoring may be used to quantify the risks to employees. Proper monitoring techniques shall be used to documentation potential exposures.

7.2.1. Sampling during activities expected to present the greatest exposure hazard may be performed while utilizing the maximum PPE protection to establish a true assessment of the hazard.

7.2.2. Full shift personal samples shall be representative of the employee's regular, daily exposure to silica.

7.2.3. Atmospheric testing results should be assessed before reducing the level PPE utilized to prevent the employee from being exposed.

7.3. Health Monitoring

Workers who are exposed to silica dust on an ongoing basis should be enrolled in a medical monitoring program, which might include physical examinations, chest x-rays, and lung function testing.

7.4. Records must be kept of the following:

- All employees who are exposed to respirable silica dust while on the job
- Employee education and training sessions
- Respirator fit-testing
- Equipment maintenance and repair
- Worksite inspections.

8. Training

8.1. An employee who may be exposed to silica is to be informed of the health hazards associated with exposure to that substance, is informed of measurements made of airborne concentrations of harmful substances at the work site and is trained in procedures developed by SEI to minimize the employee's exposure.

8.2. Training is required prior to using silica-containing materials or working in an environment known to contain airborne concentrations of Silica.

8.3. SEI requires periodic refresher training on Silica awareness and the *exposure control plan*. This is accomplished during its annual Hazard Communications Refresher. If SEI undertakes a project where an employee will be exposed to Silica, employee will be required to undergo full training refresher if the employee has not completed a full Silica training within one calendar year. *Situations where reevaluation may be necessary include regulatory updates, changes in equipment, and exposure incidents.*

8.4. Training shall include:

- Hazards associated with exposure to silica dust.
- The risks of exposure to silica
- Signs and symptoms of silica disease
- Safe work procedures to be followed (e.g., setup of enclosures, disposal of silica waste, personal decontamination)
- Use of respirators and other personal protective equipment (e.g., donning and doffing of personal protective equipment, and cleaning and maintenance of respirators)

Table A

Document History

Title:	Safety Manual	**Effective Date:**	1/1/2016
		Owner:	Jason Trinks
Original Preparer:	George Humphrey	**Approver:**	Jason Trinks

Revision History			
Date	**Section**	**Brief Description of Changes**	**Revised By**
11/22/2017	5.8	Arsenic Safety in service	GH
3/25/2020	4.1	Fleet Motor Vehicle Safety in service	GH
4/1/2020	3.20	Aerial Work Platforms in service	GH
4/1/2020	5.11	COVID 19 Policy in service	GH
5/5/2020	5.11 Traveling Commute/Measure	Added cloth face mask as minimal PPE in vehicles	GH
7/1/2020	5.12	Pandemic Disease Plan in service	GH
11/10/2020	5.11 Infection Control Measure	Added cloth face mask requirements while in SEI Facilities	GH
1/9/2021	5.11 Definitions	Added Definitions	GH
1/9/2021	5.11 Infectious Control Measure	Quarantine/Isolation requirements	GH
1/9/2021	5.11 Infectious Control Measure	Workplace cleaning/disinfecting	GH
1/13/2021	3.8 Item F	Added safety footwear shall not be worn while driving	GH
1/13/2021	3.8 Item H	Added prohibited use of tinted safety glasses	GH
4/13/2021	3.3	Updated letterhead	JT
5/6/2021	3.19	Updated letterhead	GH
5/19/2021	1.12	Added company vehicles and updated language	JT
5/21/21	3.25	Revised language in Safety Shoes section	GH
6/29/2021	3.19 Vacuum Safety Program	Revised verbiage from guidelines to policy & procedures. Added LOTO requirements to policy	GH
12/20/2021	3.8 Item F	Added Metatarsal Requirements	JG
12/19/2022	5.14 Nitrogen Awareness Program	Nitrogen Awareness in Service	GH
01/16/2023	3.8a Safety Shoe Voucher Program	Added 3.8a Safety Shoe Voucher Program to Manual	GH
02/13/2023	3.8a Safety Shoe Voucher Program	Added verbiage “resign” to section **III. Eligibility**	GH
02/24/2023	3.6 Electrical & Ground Fault Prot.	Updated entire policy	GH
03/01/2023	1.11 Incident Investigation Policy	Updated Letterhead, added Account Mngr. paragraph & revised verbiage throughout policy for better clarification	GH
03/01/2023	1.17 Disciplinary Policy & Procedures	Disciplinary Policy & Procedures in service	GH

03/01/2023	3.7 Respiratory Protection Program	Added Appendix D Voluntary Use Guidelines	GH
03/17/2023	1.18 Subcontractor Policy	Subcontractor Policy in Service	GH
04/24/2023	3.19 Records Retention Policy	Records Retention Policy in Service	GH
08/21/2023	4.3 Forklift Safety	Forklift Policy in service	GH
08/22/2023	5.15 Silica	Silica Policy in service	GH