



**ONE SOURCE
INTEGRATION**

Safety Policy

VA-DCJS 11-6379

One Source Integration, Inc.

TABLE OF CONTENTS

Section 1	Safety Guidelines
Section 2	Bloodborne Pathogens
Section 3	Hazard Communication (Right-to-Know)
Section 4	Personal Protective Equipment (PPE) Respiratory Protection Program
Section 5	Hearing Conservation
Section 6	Lockout/Tagout Safe-Related Work Practices (Electrical)
Section 7	Power & Hand Tools Equipment Safety
Section 8	Confined Space (Permit-Required)
Section 9	Scaffolds and Ladders
Section 10	Fall Protection Program
Section 11	Trenching & Excavation
Section 12	Crane & Hoist Safety
Section 13	Welding, Cutting & Brazing
Section 14	Powered Industrial Trucks
Section 15	Fire Prevention
Section 16	Contractor Safety

One Source Integration, Inc.

Company Safety Guidelines

1. STATEMENT OF SAFETY POLICY

- 1.1 The policy of One Source Integration, Inc. (OSI) is to strive for the highest safety standards that can be achieved. Safety does not occur by chance. Safety is achieved by education and careful attention to all company operations by those who are directly and/or indirectly involved. Employees at all levels must think safety and work diligently to execute company policy in maintaining occupational safety and health.
- 1.2 Our safety program has been developed and will continue to be developed on an educational basis and by monitoring policy to assure *compliance with Federal, State and Local regulations*. **Particular emphasis will be placed on Occupational Safety & Health Standards.** It is the obligation of all employees to be knowledgeable of the standards established by these agencies and to implement and follow the rules and regulations contained in these regulations while accomplishing their duties for this company.
- 1.3 Employees have a right to know the hazards of employment, if any, while employed at OSI, Inc. OSI, Inc. will make every effort to comply with regulations in this regard and properly instruct employees to minimize any danger.
- 1.4 Regard for the safety of the public, our employees and the employees of our customers is an absolute responsibility at all levels of our organization. We intend to prevent any human suffering. Accidents, even minor ones, cause pain, both physical and mental. Prevention of injury and illness is a goal well worthy of our achieving.
- 1.5 A safe operation is organized, clean and efficient. If every employee scans their area for the potential of accidents in all aspects of our operations, we will be in a better position not only to control accidents, but also to improve the total performance of our company. It is therefore of utmost importance that all guidelines in our safety program be strictly adhered to and that the intent of our safety program be a constant goal.
- 1.6 We will consider any recommendations or suggestions for improvement regarding any facet of our operation that may be implemented to serve the cause of safety.

- 1.7 SAFETY is to be "A WAY OF LIFE" within OSI, Inc. and we insist that all Employees operate as safely as the rules and good common sense dictate.

2. COMPANY RESPONSIBILITY FOR SAFETY

- 2.1 OSI, Inc. shall make all attempts to provide a safe environment, safe equipment, and personal protective equipment as may be required for your duties.
- 2.2 The company will meet or exceed safety standards as are established by federal, state and local laws.
- 2.3 We will provide employees any required safety training and may provide other training that will improve your knowledge and skills in working safely.
- 2.4 We will not expect nor require any employee to work at any duty in which the employee is not comfortable with his knowledge of how to accomplish his duty safely.
- 2.5 Wherever possible, the company will prepare written procedures and provide training on how to safely accomplish duties where a hazard may be encountered in the normal accomplishment of those duties.
- 2.6 The company shall discipline or terminate any employee found to be compromising their own safety or the safety of others or violating any safety rules contained in this manual or any regulations of Federal, State or Local law.

3. EMPLOYEE RESPONSIBILITY FOR SAFETY

- 3.1 It is an employee's responsibility to work safely and you should use good judgment in dealing with any condition not covered by rules in this manual. If you are called upon to perform work that you consider hazardous and you are not properly protected nor believe you are properly educated in safe practices for the job, you should bring the matter to your Supervisor's attention.
- 3.2 Before beginning a job, the employee shall satisfy himself that he can perform the task without injury to himself or harm to others. If in doubt as to your ability to perform the work safely, you shall call this to your Jobsite Foremen's attention.
- 3.3 The rules and practices of safety published in this section and elsewhere in this manual are not to be considered as all the rules. You are also expected to regulate your practices in accordance with regulations published by OSHA (which are considered as an appendix to this manual).

- 3.4 Should you observe a hazardous condition that may cause injury or property damage or interfere with the safe accomplishment of your duties, regardless of departmental or other considerations, you should promptly report the matter to a proper authority. If necessary, you will immediately warn others and guard the hazard to prevent others from being harmed.
- 3.5 Should you be informed of a hazardous emergency or condition, you are to obtain the name of the informant, the exact location and the nature of the emergency or hazard. You shall immediately refer this information to a person having responsibility for such matters.
- 3.6 Before commencing any work that may be hazardous, determine the safe procedure as it has been established in written policies. Where more than one employee is engaged in the same job, all employees concerned shall have been trained and shall understand the procedures to be followed and determine a means of communication should the need arise. In no circumstances should safety be compromised for speed.
- 3.7 Warning signs are to be heeded. Persons seen in dangerous situations shall be warned without being startled. Employees not required to be near potentially dangerous places shall not visit nor spectate. Keep away.
- 3.8 No "Do not operate" tags or other "lock-out" means on machinery or panel boxes may be removed nor other guards can be removed under any circumstances without permission of the person placing the "Do not operate" tags or other lock-out means. Nor shall any machinery have a guard removed until the machine has been disabled to prevent operation while the guard is removed. Barricades and warning signs shall be left in place until proper authorization has been obtained from the Supervisor to remove them.

4. PERSONAL PROTECTIVE EQUIPMENT

- 4.1 Specific work areas will be assessed by management personnel or delegated party for hazards that require or potentially require PPE. Basic Areas of concern:
 - Eyes and Face
 - Hands and Arms
 - Feet
 - Head
- 4.2 Documentation concerning this assessment should be prepared and filed to certify its completion.

- 4.3 No employee shall engage in any duty without first assuring him or herself that he or she is properly clothed and, if necessary, appropriate eye, ear or respiratory equipment is utilized to reduce the potential of injury.
- 4.4 Ankle high, lace type, leather work boots with soles capable of avoiding puncture are allowed. Job-specific appropriate footwear is required.
- 4.5 Hard Hats are available and should be worn when there is a potential for head injury.
- 4.6 Gloves suitable for the work shall also be utilized where necessary to prevent injury. They shall specifically be worn when handling rough-edged materials or abrasive materials. Please refer to material safety data sheets for information about the hazards of the material in use.
- 4.7 ANSI approved safety eyewear (as required by OSHA and Varney, Inc. for the hazard involved) shall be worn by all personnel and visitors while in the plant area, shops, or storage areas.
- 4.8 Training will be provided concerning the use, storage and care for PPE. This training will include:
 - When it is necessary
 - What is necessary
 - How to put on; take off; adjust; and wear PPE
 - Limitations of PPE
 - Proper Care; maintenance; useful life and disposal of PPE

5. IMPLEMENTING AND MONITORING SAFETY

- 5.1 It is OSI, Inc.'s policy and responsibility to observe and comply with all Federal, State and Local laws concerning safe operating procedures. If you see, know of, or suspect any practice of the company appearing to be unsafe; or if any of its employees are not practicing safe procedures or are failing to adhere to any Federal, State or Local law concerning safety, let the management of the company know or someone at Safety & Compliance Services know immediately. In the meantime, do not participate nor allow anyone you observe that is not working in a safe and practical manner to continue.

6. ACCIDENT REPORTING

- 6.1 Employees who are involved in any accident / incident which results in an injury requiring outside medical attention, or by whose actions contribute to the injury of another; and that injury is treated at a hospital or results in time off from work - will be required to submit to testing for alcohol and drugs. Testing will be in accordance with company policy. Failure to submit to testing will result in termination.
- 6.2 Any injury must be reported immediately to your Supervisor and an accident report filed within 24 hours.

7. VEHICLE ACCIDENT REPORT

- 7.1 Take the following steps immediately after an accident has occurred:
- Stop vehicle.
 - Shut off engine.
 - Above all, REMAIN CALM.
 - Warn other cars and trucks by activating 4-way flashers or other emergency warning devices
 - Do anything you can to stop more accidents at the scene.
 - Call or have someone call an ambulance at once.
 - Attempt to make anyone who is injured comfortable, but do not move or render first aid unless properly trained.
 - Notify an appropriate law enforcement agency such as the State Police, Local Police, Sheriff's Department, etc.
 - Obtain as many of the facts pertaining to the accident as possible including:
 1. Exact location
 2. Time
 3. Driver's name and owner's name of the other vehicle
 4. Witnesses' names and addresses
 5. Names and conditions of any injured
 6. Condition and any damages to your vehicle
 7. Name of investigating officer, his badge number and the agency he represents
 8. Brief description of how the accident occurred
 - Call OSI, Inc. immediately and they will contact the Insurance Company, if necessary.

- Notify OSI, Inc. as soon as possible, and give us the information required above. If unable to call yourself, have someone call for you and leave adequate information as to where you may be contacted or a phone number where more information concerning the accident may be obtained.
- 7.2 Be ready to give the following information to the other driver and police when they request it:
- Your name and home address
 - Your boss' name and address
 - Tag number of company vehicle
 - Driver's license
 - Name of insurance company or designated agent
- 7.3 If you hit a parked car, truck, or bus, try to find its owner. If the owner cannot be found, leave both your name and address, and the name and address of your carrier. Place this information where it can be seen.
- 7.4 If you are injured, **STAY CALM** and get medical attention. Do not stay on the scene. Your personal well-being is the single most important thing you have to think about.
- 7.5 **DO NOT ARGUE**, accuse or admit blame for the accident.
- 7.6 **DO NOT** make any settlements or agree to any settlements with anyone without permission from your company or insurance carrier.
- 7.7 **DO NOT** give any facts or make any statements to anyone except the investigating officer or representative of your company or representative of the Insurance Company.
- 7.8 **DO NOT** move your vehicle until it has been cleared through management or the investigating authorities.
- 7.9 **MAKE SURE** to properly complete **BOTH SIDES** of the vehicle accident report form as soon as you can. Your remembrance of the accident and your ability to obtain the information needed is best if accomplished at this time.
- 7.10 On return to the main site, you must provide a written accident report.

8. ACCIDENT INVESTIGATION

8.1 Each and every accident reported will be investigated by Varney, Inc. to determine all the facts surrounding the accident and cause of the accident.

9. SPECIFIC SAFETY PRACTICES AND PROCEDURES

9.1 Specific written practices and procedures may be found in regulations and appendixes of the Occupational Safety & Health Act

9.2 Company practices and procedures may be found as follows:

Section 2	Bloodborne Pathogens
Section 3	Hazard Communication (Right-to-Know)
Section 4	Personal Protective Equipment (PPE) Respiratory Protection Program
Section 5	Hearing Conservation
Section 6	Lockout/Tagout Safe-Related Work Practices (Electrical)
Section 7	Power & Hand Tools Equipment Safety
Section 8	Confined Space (Permit Required)
Section 9	Scaffolds & Ladders
Section 10	Fall Protection Program
Section 11	Trenching & Excavation
Section 12	Crane & Hoist Safety
Section 13	Welding, Cutting and Brazing
Section 14	Powered Industrial Trucks
Section 15	Fire Prevention
Section 16	Contractor Safety

One Source Integration, Inc.

Bloodborne Pathogens

Purpose: To provide guidelines to ensure employees have a full understanding of potential risks involved in specific job functions and eliminate or in the least minimize employee exposure to infectious materials.

Scope: The Exposure Control Plan applies to all OSI, Inc. personnel who have a potential for occupational exposure to blood and/or other infectious materials.

Reference: OSHA Standard 29 CFR §1910.1030 – Bloodborne Pathogens; Final Rule

Definition (In determining the degree of risk associated with a suspected or potential exposure event, employees and foremen shall consider the following definitions: (Also see Appendix A – Bloodborne Pathogens)

Occupational Exposure: 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.

Infectious Materials: Includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva (from dental procedures), any body fluid visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

Exposed: With respect to HIV or any other infectious disease, to be in circumstances in which there is significant risk of becoming infected with the etiologic agent for the disease involved. (Ryan White Comprehensive AIDS Resources Emergency Act: Emergency Response Associates: Notice. Department of Labor, Centers for Disease Control and Prevention.)

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

Parenteral: Piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Contact: Any potential or actual exposure to infectious materials through those rare situations when it is necessary to attend to an individual or victim with wounds during an extreme emergency.

Responsibility and Authority

Safety & Compliance Services, Inc., **is recognized as the designee** for OSI, Inc. in handling the duties of the Designated Infection Control Officer and is responsible for:

Acting as the primary contact person for the initial processing of exposure reports.

Conducting time-of-incident investigation to assure appropriate follow-up measures have been instituted.

All post exposure follow-up investigations.

The completion of all appropriate documentation and reports, and ensuring that all necessary documentation is forwarded Human Resources, to be filed in the appropriate medical records file.

It is the responsibility of each employee to adhere to these policies and procedures.

Policy and Procedure

Personnel at Risk

First Response Team: Any employee authorized to render First Aid and/or CPR in case of injury to other employees during the course of their employment. Individuals trained in this capacity are posted on the appropriate bulletin board.

Other employees: Employees caused to be exposed to Bloodborne Pathogens by incident/accident. This would include those conducting cleanup of contaminated surfaces, such as machinery or floors, after an incident occurred.

Risk Exposure Locations – Any response location that requires First Aid/CPR (first responders).

Potential Exposures

The potential exposure in an emergency by treatment of wounds, performing CPR, handling contaminated laundry, handling waste such as dressings, and cleaning up the contaminated work area.

A general example of exposures include: Trained First Responders rendering First Aid

Types of Exposure

The types of exposure with the highest likelihood of causing infections are those associated with exposure from arterial bleeds, and exposure to non-intact skin and/or mucous membranes with blood or body fluids during extreme emergencies.

Exposures may also occur by non-intact skin and/or mucous membrane contact with environmental surfaces or other materials that have been contaminated by infectious materials, such as when cleaning surfaces that have been contaminated.

Methods of Exposure Control

Engineering Controls

Designated placement of regulated disposal of contaminated waste (i.e., dressings) in plastic bags with the biohazard symbol.

Hand-washing facilities should be located on site. On remote sites where facilities may not be available, hand-wipes – located in First Aid Kits will be available.

Hand Washing Policy – Hand washing is one of the most important factors in both prevention and control of infectious diseases. It is the single most effective preventive measure for personnel. The principle mechanical removal of dirt and microorganisms by sudsing, friction and flushing with water.

Proper hand washing shall be performed after each contact to include the following steps:

Use an acceptable soap as described in the following section - hand washing agents.

Work-up lather and use friction for 15 seconds.

Rinse hands well and dry them with a paper towel.

Important – use a paper towel to turn off the faucet.

Plain soap and water are adequate for routine hand washing.

In field situations, when running water is not available, alcohol-based foam or gel solutions shall be used. When applying the solution, rub hands together. The friction causes the solution to evaporate, killing surface organisms.

NOTE: This is a temporary preventative measure until circumstances allow a more thorough hand washing technique to be performed.

Even when gloves are used, hand washing shall take place after removal of gloves.

The following is a review of hand washing agents:

Bar Soaps – Safeguard, Ivory, and Dial – Helps remove organisms, but doesn't kill them

Liquid Soap Antiseptic – Safe n'Sure, Kindness Kare – Helps remove organisms but doesn't kill them

Alcohol Foam Agents – Alcare, Cal-Stat – Kills staph, strep, fungus organisms

Providone-iodine – Betadine, Acu-dyne – Kills staph, strep, fungus organisms

Work Practices – Work practices are general or specific policies or procedures which employees are required to observe in order to minimize the risk of exposure to them or others. Examples of work practice controls include: written procedures, for using PPE during situations requiring First Aid and/or CPR and for handling contaminated waste or cleaning contaminated surfaces.

Damaged Skin Protection:

Prior to any contact with victims, Emergency Response personnel shall cover all areas of abraded, lacerated, chapped, irritated or otherwise damaged skin with an occlusive (waterproof), adhesive dressing.

Emergency Response personnel with extensive skin lesions or severe dermatitis shall consult with his/her Supervisor before participating in victim care or handling patient care equipment.

Efforts are made to assess each victim's status and initiate appropriate precautions whenever indicated.

Employees must be aware that, most often, the presence of a communicable disease or immune-deficiency is not known at the time of admission. Therefore, ALL contacts shall be treated as potentially infectious and/or susceptible. The Center for Disease Control recommends "Body Substance Isolation" when emergency response personnel must consider ALL body substances from any victim as potentially infectious. Body Substance Isolation exceeds universal precautions that state blood or certain body fluids may be potentially infectious.

The primary infection control measure – careful hand washing – shall be practiced by all employees before and after each direct contact.

Universal Precautions, simply stated, indicate that all blood and internal body fluids should be regarded as infectious, and that all reasonable precautions should be taken to prevent exposure to those fluids.

The fluids covered under Universal Precautions are: blood, semen, vaginal secretions, cerebrospinal fluid, amniotic fluid, peritoneal fluid, pericardial fluid, synovial fluid (and saliva in the case of dental procedures). Other fluids that are visibly contaminated with blood are also included, as are fluids that are unidentifiable or mixed with other fluids (such as vomitus, fluids that are suctioned, etc.)

Employees shall wear latex gloves whenever there is potential for contact with the body fluids, handling waste of any kind or cleaning environmental surfaces. Disposable gloves must not be washed or decontaminated for reuse. Arms shall be covered in all cases where splashes or contamination by body fluid may occur.

Employees shall wash their hands with soap and water as soon as feasible after removing the gloves.

Employees shall wear safety glasses and disposable masks in a situation that may cause exposure to the eyes, mouth and/or nose. Employees should perform all procedures involving blood or other potentially infectious materials being careful to minimize splashing, spraying, spattering and generation of droplets of blood or other potentially infectious materials.

NO EATING, DRINKING, APPLYING COSMETICS, SMOKING, OR HANDLING OF CONTACT LENSES is allowed in any area of contact or in the contaminated disposal area. **PERSONAL PROTECTIVE EQUIPMENT (PPE)** shall be removed prior to leaving the treatment area and hands washed to reduce potential exposure.

PPE IS NOT A SUBSTITUTE FOR CONTROLS – OSI, Inc. will provide PPE needed for employees at no cost to them and shall ensure its proper disposal, cleaning, and/or laundering when applicable. Contaminated PPE is not to be taken home for cleaning or laundering by employees. When PPE is removed, it shall be placed in appropriately designated areas or containers for storage, disposal and washing.

PPE, Locations and Uses – Only PPE considered appropriate will be provided to employees. Appropriate includes only those items that do not permit blood or other potentially infectious materials to pass through or to reach the employees work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time.

NOTE: The following PPE will be available in first aid kits onsite or issued to those employees needing this protection. The PPE shall be readily accessible in appropriate sizes where necessary.

Gloves are to be used to prevent skin contact with blood or other potentially infectious materials, as well as to prevent skin contact with environmental surfaces that may have been contaminated with those substances. Hypoallergenic gloves,

glove liners, powderless gloves or other similar alternatives shall be made available to those employees allergic to gloves normally provided.

Safety glasses/Face Shields must be worn at all times where bleeding is possible. This is especially required if splashes, sprays, splatters or droplets can be reasonably anticipated. Employees should anticipate the worst and always be prepared.

Contaminated Reusable Personal Protective Equipment (PPE) such as the pocket facemask used for CPR shall be cleaned and disinfected as soon as feasible after use.

Contaminated Laundry shall include the victim's and the employee's clothing and footwear. Whenever the clothing becomes contaminated with visible blood or body fluids it should be changed as soon as feasible and placed in a container marked ABIOHAZARD@ in the designated areas for contaminated laundry. **THE CLOTHING MUST NOT BE TAKEN HOME.**

This action will prevent potential exposure of infectious disease to persons living in the employee's household. Once cleaned, at OSI, Inc.'s expense, the clothing may be returned to the employee. Note: OSI, Inc. will provide the employee with a uniform, to be worn in the event clothing is saturated.

Small stains from blood or body fluids shall be "spot cleaned" and then disinfected. The stain shall initially be cleaned with a mild detergent and water. Utility gloves shall be worn and cleaning shall take place at a utility sink that is not used in food preparation or for personal hygiene.

Clothing contaminated beyond this point shall be bagged and sent to an authorized Laundromat for cleaning.

Contaminated Environmental Surfaces shall be cleaned and disinfected as soon as feasible after contamination occurs using EPA registered disinfectants or a solution of 1:10 household bleach to water. This includes tools, equipment, containers, floors, etc.

Cleaning is defined as the physical removal of dirt and debris. Soap and water should be used, combined with scrubbing action. The scrubbing action is the **KEY** to rendering all items safe. Cleaning must take place before any required disinfection.

Disinfection is reducing the number of disease-producing organisms by physical or chemical means. Personnel should clean all items with soap and water, and disinfect with the provided disinfectant solution.

NOTE: Disinfectants can be toxic and/or caustic. Disinfectant solutions should have an EPA registry number, and labeled as being effective against mycobacterium tuberculosis. Routine disposal of the germicidal cleaning water in the public drainage system is acceptable. Items, such as sponges or rags used to clean the contaminated area, must be placed in plastic bag and marked as biohazard for disposal.

Personnel should inspect equipment and vehicle surfaces looking for blood, tissue or other residue soiling equipment.

Personnel shall wear utility gloves over disposable gloves during the cleaning procedure.

Utility gloves shall be disinfected for re-use if the integrity of the glove is not compromised. Utility gloves must be discarded if they are cracked, peeling, discolored, torn, punctured, or exhibit other signs of deterioration.

Spills of blood or other body fluids should be cleaned up as soon as practicable using an EPA approved disinfectant or a solution of 1:10 (household bleach to water). Broken potentially contaminated glass or other potentially contaminated sharp objects need to be handled by means other than by hand. Tongs can be used to pick up these objects or a brush and dustpan. Use mechanical means to prevent glass puncture.

NOTE: Cleanup should not interfere with the actions of medical personnel and/or the investigation of other Officials. Always check with the Officials on site before initiating cleanup.

Waste Disposal – Potentially infectious materials will be placed in rigid closable leak-proof containers that are labeled with the universal precaution symbol and the word “biohazard.” The employee should avoid any body contact with the contaminated liner. Gloves should always be worn when handling contaminated liners or trash receptacles. Liquid waste can safely be disposed of in the city sewer system.

Vaccinations 29 CFR, §1910.1030 requires that Hepatitis B vaccinations be made available after the employee has received training within (10) working days of initial assignment and to all employees following an occupational exposure.

The vaccination will be available to the employee at a reasonable time and place.

It will be performed by or under the supervision of a licensed physician or other appropriately trained and licensed health care professional and provided according to the United States Public Service (USPS) recommendations current at the time of evaluation.

Participation is voluntary.

Hepatitis B vaccination will also be available for any employee who initially declines but later decides to accept the vaccination. The statement attached identified as Form #10-393 (Appendix B) is provided for the employee to sign on declining the vaccination.

Post exposure Evaluation and follow-ups are also provided by OSI, Inc. and is outlined in a later section, Occupational Exposures – Reporting Procedures.

Training

All employees who are occupationally exposed to bloodborne pathogens while conducting work for OSI, Inc. will be provided training about the hazards associated with blood and potentially infectious material and the protective measures to minimize the risk of occupational exposure. This training shall be conducted during daytime business hours and at a reasonable location.

Training shall be provided at the time of the initial assignment of the task where occupational exposures may take place and at least annually thereafter.

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

Additional training shall also be provided when changes such as modifications of tasks or procedures are instituted or if a new task creates additional potential for exposure. The additional training will be limited to addressing the change or new exposures that were created.

Training will include each section covered by this written program. It will be mandatory that each employee read and become familiar with the procedures outlined herein.

Training records will be maintained for three years from the date of training and will include the instructor's name, credentials, participating employees' signatures and department/job titles, summary of the training session and the date the training was conducted.

Recordkeeping

OSI, Inc. shall establish and maintain an accurate record of each employee with an occupational exposure.

These records will include their name, social security number, copy of the Hepatitis B vaccination status including the dates of all Hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccines and a copy of all results of examinations, medical testing and follow-up procedures. A copy of the Health Care professional written opinion and any copies of information provided by the Health Care professional shall also be kept as part of these records.

OSI, Inc. will ensure that the medical records are kept confidential and are not disclosed or reported to any person within or outside the workplace, exceptions required by law, without the expressed consent of the employee.

OSI, Inc. shall maintain these records for at least the duration of employment plus thirty (30) years.

Should OSI, Inc. cease to do business with no successor employer to receive and to retain employees' records for the subscribed period; OSI, Inc. shall notify the Director of the National Institute for Occupational Safety and Health, the U. S. Department of Health and Human Services or designated representative at least three (3) months before disposal. If required to do so, OSI, Inc. will transmit employee's records to the Director or designee within the said three-month period.

Reporting Exposures

The Supervisor will conduct the post-exposure follow-up for exposures to the employee. Employees who experience an exposure incident must immediately report their exposure to the Supervisor **WITHIN 24 HOURS OF THE EXPOSURE**.

If exposure to healthy, intact skin from the victim's body fluid occurs, or whenever there is contact with blood or body fluids through open wounds and/or mucous membrane additional steps must be taken to limit exposure:

Restrict the number of personnel in contact with the individual to those essential for treatment.

Notify management and complete Infectious Disease Exposure Form #10-0392 (Appendix D) immediately.

The exposed employee must contact the Supervisor within 24 hours of the exposure to schedule the post-exposure follow-up evaluation.

If an injury occurs with exposure, report this to the Supervisor or the appropriate management immediately. Complete form #007 (Appendix C) regarding that injury.

If the injury requires medical treatment, the employee must register as a patient to be covered under Workers' Compensation. It is important to advise the ER staff that an exposure has occurred especially to an open area on the skin or mucous membranes.

For exposures only, the employee must complete the required Exposure Form #10-0392 and the hospital's exposure form, if any. The #10-0392 form can be completed by the Supervisor, if necessary.

Exposure Reporting Chain of Command: 1) Supervisor 2) Safety Officer

The Supervisor must report employee exposure within 24 hours. It is very important to alert the hospital that an exposure has occurred.

The Supervisor will conduct the post-exposure follow-up during which the employee will be interviewed regarding history of Hepatitis, risk factors for exposure to Hepatitis B and Hepatitis B immune status. The following blood tests will be requested if the employee has been exposed to blood and open wound contact:

Hepatitis B Profile with immune status.

Hepatitis B vaccine will be offered to those employees who have not received the vaccine at no cost to the employee.

HIV antibodies to determine exposure.

Occupational exposures to an unknown source or with a known contamination source should be handled as follows:

Employee shall immediately notify his or her Supervisor of the incident.

The Supervisor shall be immediately notified of the incident.

The Supervisor, shall, as soon as possible, contact the emergency department attending physician at the hospital receiving the source victim, whose responsibility it shall be to take such actions as may be necessary to determine the risk of infection to the exposed employee, as outlined in the Ryan White Act.

The Supervisor will contact the Infection Control Practitioner at the receiving hospital to determine whether the victim is a carrier of, or infected with, HIV, Hepatitis B, Hepatitis C, or syphilis. The Supervisor will ask that serologic testing be done using the Source Testing Request Form, if the above is not known.

Determination of risk will be based on:

Interview of victim

Interview of victim's physician

Review of victim's chart

The infection control practitioner at the receiving hospital will be asked to supply the approved panel physician or clinic which is treating the exposed employee with the results of the source victim's test results.

NOTE: Employee shall sign form #10-395, HIV/HBV Testing Declination Form (Appendix E), or #10-394, Medical Consent Form for HIV / HBV Serological Testing (Appendix F).

According to the Code of Virginia, Section 32.1-45.1, blood will be drawn from the source victim and the following tests completed:

Hepatitis B surface antigen (HbsAg)

Hepatitis B core antibody (HB_cAb)

Hepatitis C

HIV antibody I & II

VDRL and RPR (syphilis test)

The above tests will be performed at the expense of OSI, Inc.

The exposed employee should be interviewed regarding any history of Hepatitis or HIV, risk factors for exposure to Hepatitis B or HIV, and Hepatitis B immunization status. The following blood tests will be required:

HbsAg (antibody titer to Hepatitis B surface antigen)

HIV antibody (ELISA)

Any personnel receiving a documented exposure from a Hepatitis B positive victim or any unknown source should have an additional Hepatitis B antibody test done six weeks post exposure.

The HIV anti-body test needs to be re-drawn for follow up testing at three and six month intervals.

The results of these tests will be provided to the employee with counseling from the approved panel physician or clinic responsible for the medical follow up. The results of these tests will remain in strict confidence between the employee and the attending physician. The employee will provide the Supervisor or a member of the Accident Investigation Team with information necessary to comply with workers' compensation laws and this policy.

Healthcare provider: _____

Medical providers: _____

Appendices

Appendix A: Bloodborne Pathogens

Appendix B: Exposure Form #10-0393

Appendix C: Exposure Form #007-BPPI

Appendix D: Form #10-0392

Appendix E: Form #10-0395

Appendix F: Form #10-0394

Appendix A

I. BLOODBORNE PATHOGENS

A. Overview

It is quite natural for all of us to help a fellow worker or another who has been injured. Injuries that cause the victim to bleed hold a danger to those who assist the victim should this victim be themselves a carrier of certain viruses. Cleaning up contaminated materials also poses a threat to the potential of contacting certain viruses. Consequently, all should think and follow some basic procedures for self-protection.

- B. The OSHA §1910.1030 Bloodborne Pathogens Standard was issued to reduce the occupational transmission of infections caused by microorganisms sometimes found in human blood and certain other potentially infectious materials. Although a variety of harmful microorganisms may be transmitted through contact with infected human blood, Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV) have been shown to be responsible for infecting workers who were exposed to human blood and certain other body fluids containing these viruses, through needle stick injuries, by direct contact of mucous membranes and non-intact skin with contaminated blood/materials in the course of their work. Occupational transmission of HBV occurs much more often than transmission of HIV. Although HIV is rarely transmitted following occupational exposure incidents, the lethal nature of HIV requires that all possible measures be used to prevent exposure of workers.

- C. Your company has employees who are trained in First / Aid and CPR for extreme emergency situations only. In the event of an injured employee, first efforts should be made to contact 911 followed by contacting these specifically trained associates through your Supervisor. Let them handle the situation. However, if neither of these is possible, the following procedures should be followed:

1. You are advised that appropriate protective gear such as mask, gloves, aprons, etc. are available at the first aid station/s. Make use of these protective measures before you attempt to aid the injured person.
2. Isolate any protective gear or other materials, including your own clothing, if contaminated with any blood. It must be disposed of properly.
3. Wash yourself with soap and water as soon as possible after you have completed your aid to the victim. Do not smoke, eat, nor drink anything until you have washed up.
4. Make no effort to pickup broken glass or to examine the cause of a bleeding injury. Consider these things as contaminated.

5. Report your actions to your Supervisor as soon as possible after an incident, regardless of how slight your involvement or how slight the injury, involving bleeding of any sort.
 6. Regardless of the amount of exposure you have with the victim's blood, you have the option to request medical evaluation and vaccination against HBV. (There is no vaccination yet available against HIV).
- D. A complete exposure control plan and training is available for those who, by reason of their duties, are likely to be exposed to potentially infectious materials and bloodborne pathogens. Any employee may request a copy of this plan by contacting your Supervisor.

Appendix B

FORM #10-0393

ONE SOURCE INTEGRATION, INC.

HBV VACCINATION DECLINATION FORM

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.

Employee Signature

Date

Appendix C

EXPOSURE FORM #007-BPPI

BLOODBORNE PATHOGENS PROTECTION
INJURY FORM

Date: _____

Time: _____

Full Name: _____

Title: _____

Social Security Number: _____

Date of Birth: _____

Address: _____

City, State, Zip: _____

Injury/Illness: _____

Date of Injury: _____ Time of Injury: _____

Emergency Involving:

Environment ___ Public Employee No Employee

Incident Report:

Project: _____

Telephone No: _____

Location: _____

Did a Chemical Exposure occur? ___ YES ___ NO

If YES – Describe:

Name & Addresses of Any Witnesses: _____

Were Emergency Procedures Adequate? _____ YES _____ NO

Date Employee Began to Lose Time: _____

Actual/Estimate Date of Return: _____

Describe Extent of Injury/Illness: _____

Describe Treatment: _____

Team Leader's Name: _____

Work Schedule at time of Accident: _____

Had Adequate Training Been Given? _____ YES _____ NO

How can the company prevent similar incidents from happening? _____

What action can/has been taken to prevent similar occurrences? _____

Employee's Signature

Supervisor's Signature

Designated Infection Control Officer's Signature

Appendix D

EXPOSURE FORM #10-0392

**ONE SOURCE INTEGRATION, INC.
INFECTIOUS DISEASE POSSIBLE EXPOSURE FORM
(To be completed by Employee)**

1. **EMPLOYEE:** _____ 2. **SSN:** _____
3. **DEPARTMENT:** _____ 4. **SHIFT:** _____
5. **HOME ADDRESS:** _____
6. **PHONE (HOME):** _____ **(OFFICE):** _____
7. **DATE OF POSSIBLE EXPOSURE:** _____
8. **TIME OF POSSIBLE EXPOSURE:** _____
9. **LOCATION OF OCCURRENCE:**

10. **DESCRIBE HOW POSSIBLE EXPOSURE OCCURRED (be specific):**

11. **TO WHAT WERE YOU EXPOSED? {Check appropriate body fluid(s)}:**
Blood__ **Tears**__ **Feces**__ **Urine**__ **Saliva**__ **Sweat**__ **Vomit**__ **Sputum**__ **Other**__ **Specify if other:**_____
12. **IF EXPOSURE WAS BLOOD, WAS IT AN ARTERIAL BLEED?**
_____ **YES** _____ **NO**
13. **WHAT PART(S) OF YOUR BODY WERE EXPOSED? (Be specific):**
Face__ **Hands**__ **Arms**__ **Legs**__ **Chest**__ **Abdomen**__ **Eyes**__ **Mouth**
14. **DID YOU HAVE OPEN CUTS, RASHES, ETC THAT WERE EXPOSED (be specific)?** _____

15. **DID YOU SEEK MEDICAL ATTENTION?** _____ **YES** _____ **NO**
IF YES, LOCATION, TIME AND DATE:

16. **NAME OF TREATING PHYSICIAN:** _____

EXPOSURE FORM #10-0392

17. **NAME OF SOURCE PERSON:** _____
SEX: ___ M ___ F

18. **POSSIBLE EXPOSURE REPORTED TO:**

19. **WERE PROCEDURES FOR PRECAUTIONS BEING FOLLOWED AND PPE USED?**
____ YES ____ NO

IF NO, PLEASE EXPLAIN:

20. **MEASURES TAKEN TO PREVENT REOCCURRENCE:**

21. **WITNESS TO POSSIBLE EXPOSURE:**

SIGNATURE _____ **DATE** _____

22. **SUPERVISOR:**

SIGNATURE _____ **DATE** _____

23. **EXPOSED EMPLOYEE:**

SIGNATURE _____ **DATE** _____

24. **DESIGNATED INFECTION CONTROL OFFICER:**

SIGNATURE _____ **DATE** _____

Appendix E

FORM #10-0395

ONE SOURCE INTEGRATION, INC.

HIV / HBV TESTING DECLINATION FORM

I understand that due to my occupational exposure to blood or other potentially infectious material I may be at risk of acquiring Hepatitis B and/or Hepatitis C and/or Acquired Immune Deficiency Syndrome. I do or do not (circle one) give consent to a baseline blood collection and do not consent for HIV / HBV serological testing. I understand if I have the baseline blood sample collected, the sample shall be preserved for at least 90 days. I then will have 90 days from the exposure incident to elect to have the baseline sample tested for HIV / HBV. (Please sign consent form)

Employee Signature

Date

Appendix F

FORM #10-0394

ONE SOURCE INTEGRATION, INC.

MEDICAL CONSENT FORM FOR HIV / HBV SEROLOGICAL TESTING

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring Hepatitis B and/or Hepatitis C and/or Acquired Immune Deficiency Syndrome. In the event of exposure to blood or other infectious materials; I voluntarily agree to be tested for the HIV / HBV and that the results may be submitted to my employer who shall ensure confidentiality in accordance with OSHA Standard 29 CFR §1910.20.

Employee Signature

Date

One Source Integration, Inc.

Hazardous Communication Program

Right-to Know

Purpose: The purpose of the Right-To-Know Program is to protect the health of our most valuable asset - our employees. To provide the employees with the necessary information concerning health and physical hazards of the materials used in our operations; and to comply with OSHA regulations as may be applicable to Federal, State or Local right-to-know regulations wherever our employees may be working.

Scope: It is the policy of OSI, Inc. to ensure that all employees have a safe and healthy environment in which to work.

Reference: OSHA Standard 29 CFR 1910, Subpart Z, §1910.1200

Designation: *Safety & Compliance Services, Inc.*, is recognized as the designee in handling the administrative duties of the Hazard Communication Coordinator. The Supervisor will function as the Hazard Communication Coordinator on the job-site.

Orientation:

The Hazard Communication Coordinator will ensure that all employees will receive the following information:

- An overview of the requirements contained in the Right-To-Know Standard.
- Hazardous chemicals in the work place.
- Location and availability of written Right-To-Know Program.
- Physical and health effects of the hazardous chemicals.
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the workplace.
- How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment.

- Steps OSI, Inc. has taken to lessen or prevent exposure to hazardous chemicals.
- Safety emergency procedures to follow if they are exposed to hazardous chemicals.
- How to read labels and review Material Safety Data Sheets (MSDSs) to obtain appropriate hazardous information.

Notification:

- New employees of OSI, Inc. will be trained on the above information.
- Before a new hazardous chemical being introduced into the workplace, each employee will be given information as outlined above.
- After training has been accomplished, trained employees are required to sign a training record indicating that they are familiar with and understand the intent of the Right-To-Know Program.

MATERIAL SAFETY DATA SHEETS (MSDSs): (Glossary of Terms follows this section.)

- a. Copies of Material Safety Data Sheets (MSDSs) for all hazardous chemicals to which employees of the Varney, Inc. may be exposed will be kept in marked binders in the following locations:
 - Work Truck/Job Trailer
 - Varney, Inc. main office

MSDSs will be available to all employees for review during each work shift.

- b. If MSDSs are not available or new chemicals in use do not have MSDSs, the Hazard Communication Coordinator should be contacted immediately.
- c. The Hazard Communication Coordinator will maintain the original set of the Material Safety Data Sheets including all updates. Copies of letters requesting MSDSs are located in same binder with the MSDSs.
- d. Material Safety Data Sheets are organized alphabetically in binders and a list of products will be found at the front.

CONTAINER LABELING:

- a. The Hazard Communication Coordinator will ensure that all containers received for use will:
 - Be clearly labeled as to the contents.
 - Note the appropriate hazard warning.
 - List the name and address of the manufacturer/importer/or responsible party.
- b. It is the policy of OSI, Inc. that no container will be released for use until the above data is verified.
- c. Supervisor/employees will ensure that all secondary containers within their areas of responsibility are labeled either with an extra copy of the original manufacturer's label or with generic labels which have a section for identity and hazard warning.

LIST OF HAZARDOUS CHEMICALS:

A list of hazardous chemicals in the workplace located in the front of the labeled MSDS binders as Table of Contents. The list will be updated as information is received.

CHEMICALS IN UNLABELED PIPES:

In the event that conditions exist where hazardous chemicals are transferred through unlabeled pipes, foremen will inform employees of the hazard as it exists in their area of responsibility and the pipes will be labeled by maintenance.

INFORMING SUBCONTRACTORS / VISITORS:

It is the responsibility of the Hazard Communication Coordinator to provide subcontractors and visitors with the following information:

- a. List of Hazardous chemicals to which they may be exposed while on the job site.
- b. Precautions the employee may take to lessen the possibility of exposure by usage of appropriate protective measures.
- c. Subcontractors will be required to sign a "statement of acknowledgment" (See attachment following this section) in order to comply with paragraphs 9a and 9b above. These statements will be kept in a labeled binder in the locations where the subcontractor is performing work.

OBTAINING INFORMATION FROM SUBCONTRACTORS & GENERAL CONTRACTORS:

The Hazard Communication Coordinator will ensure that general contractors and subcontractors will provide the following information for the protection of employees of OSI, Inc.:

- a. List of hazardous chemicals to which OSI, Inc. employees may be exposed while on the job site.
- b. Precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

EMPLOYEE PURCHASED PRODUCTS:

Employees of OSI, Inc. are not allowed to bring chemical products into the workplace without approval from the Hazard Communication Coordinator.

EXEMPTIONS:

The following items are exempt from the requirements of the Right-To-Know Standard:

- a. Foods, drugs, or cosmetics brought into the workplace for employee consumption.
- b. Foods, drugs, cosmetics, or alcoholic beverages in a retail establishment that are packaged for sale to consumers.
- c. Any drug (over the counter or prescription) when it is in solid, final form for direct administration (i.e., tablet or pills).
- d. Tobacco or tobacco products.
- e. Wood or wood products.
- f. Articles (Commodities in their final form)
- g. Any consumer product or hazardous substance, where the employer can demonstrate that it is used in a workplace in the same manner as normal consumer use and which use results in a duration and frequency of exposure which is not greater than exposure experienced by consumers.

DISCIPLINE:

OSI, Inc. reserves the right to discipline or terminate any employee for violation of this Right-To-Know Standard. (See Health and Safety Guidelines, Section 10)

RESPONSIBILITY:

- a. It is the responsibility of the Hazard Communication Coordinator to ensure compliance with this policy that allows easier access to information on hazardous chemical substances present in the workplace through the use of labels and hazard warnings, Materials Safety Data Sheets, information and training and access to written records.
- b. It is the responsibility of each employee to adhere to the policies and procedures of OSI, Inc.

MATERIAL SAFETY DATA SHEET GLOSSARY OF TERMS

The glossary lists the most important terms used in Material Safety Data Sheets. If you don't understand a word or it's meaning, ask your team leader for help.

Absorption:

The movement of a hazardous chemical through the skin into the blood stream.

Acute:

Short-term effect usually occurs when exposed to a chemical for a short time.

Boiling Point:

The temperature at which a liquid becomes a gas.

Catalyst:

A chemical that causes a chemical reaction to happen faster.

Ceiling:

The maximum level of permitted exposure to a material.

Chronic:

Long-term effect - Low-level exposure to a hazardous material over long periods of time can cause long-term effects.

Combustible:

A liquid that becomes flammable when it reaches a temperature over 100°F.

Concentration:

PPM or Parts per Million is a volume-per-volume relation of concentration. There are so many parts of a material per one million parts of another substance.

Decomposition Products:

Products that are released when a material is exposed to aging, heating, burning, air, or allowed to react with another material.

Evaporation Rate:

The time it takes a given amount of a material to completely dry up, compared to ether, which evaporates very quickly, or to butyl acetate, which evaporates very slowly.

Flammable (Explosive) Limits - LEL and UEL:

A flammable material will burn in air when ignited. Materials are flammable, combustible, or explosive. When a material concentration is below the LEL or Lower Explosive Limit, the material is too lean to burn. When the material concentration is above the UEL or Upper Explosive Limit, the material is too rich to burn. The material will burn if the concentration is between the LEL and UEL.

Flash Point:

The temperature at which a flammable liquid produces enough vapor to burn.

Incompatibility:

List of materials you should not mix with the material you are using to avoid a reaction.

Ingestion:

Taking a material by mouth and swallowing the material.

Inhalation:

Breathing vapor or gas from a material

Inhibitor:

A chemical which, when added to another, reduces the chance of a reaction.

Oxidizing Agent:

A material that gives off oxygen in a chemical reaction.

Polymerization:

A reaction with extremely high or uncontrolled release of energy.

Reactivity:

The ability of a material to undergo a reaction that releases energy or heat.

Solubility:

The tendency of a material to dissolve in water or other solvent.

Stability:

The tendency of a material to resist undesirable chemical changes during storage or transport.

Threshold Limit Value (TLV)/ Permissible Exposure Limit (PEL):

Both indicate safe exposed levels. The level you can be exposed to each day with no adverse effects.

Vapor Density:

The weight of a vapor compared with an equal volume of air. If less than "one," the vapor will rise in air. If greater than "one," it will tend to fall in air.

Vapor Pressure:

A high vapor pressure indicated a liquid will evaporate easily.

Volatile Percent:

The percentage of a liquid or solid that evaporates at room temperature. The higher the percentage, the faster the material evaporates. Fast evaporation means greater danger.

**SUB-CONTRACTOR
STATEMENT OF ACKNOWLEDGMENT**

I do hereby acknowledge that I have thoroughly read and do understand the Hazard Communication Policy as directed by OSI, Inc. My signature below verifies that I have received a copy for my possession and will direct my employees (if any) to follow all guidelines and requirements included in such policy.

SUB-CONTRACTOR SIGNATURE

Date

One Source Integration, Inc.

Personal Protective Equipment (PPE)

Purpose: This policy provides an effective mechanism for the selection of appropriate protective equipment.

Scope: This policy applies to all OSI, Inc. employees and contractors working under the direct supervision of OSI, Inc.

Reference: OSHA standard 29 CFR 1926, Subpart E, §1926.95

Policy:

1. OSI, Inc. will provide its employees with all PPE required in performing their assigned tasks. Requests for procurement of PPE will be directed through the Supervisor.
2. PPE will be of safe design and construction for the work to be performed and comply with the appropriate ANSI (or other) standards specified in the respective OSHA standards.
3. PPE will be provided, used, and maintained in a sanitary and reliable condition to fulfill its intended purpose.
4. Damaged or defective PPE will not be used. Employees will inspect their assigned PPE prior to use. Damaged PPE will be tagged and taken out of service.
5. If employees choose to provide their own PPE (practice not encouraged) OSI, Inc. will not assure its adequacy.

Training:

Employees will be trained in the following areas:

- When PPE is necessary
- What PPE is necessary
- How to properly don, doff, adjust, and wear PPE
- The limitations of PPE
- Proper care, maintenance, useful life, and disposal of PPE

The training will include both classroom and practical demonstrations by the employee to assure that they demonstrate the understanding and ability to use the PPE properly.

The Supervisor will inform affected employees of the PPE requirements for each assigned task and ensure that the employee demonstrated the ability to use the PPE properly. The Supervisor and affected employees should utilize the attachment following this section as certification of this requirement.

Affected employees who have been previously trained will be subject to retraining due to changes in the workplace and changes in types of PPE required.

PPE HAZARD ASSESSMENT AND EQUIPMENT SELECTION:

1. OSI, Inc. will assess the work site to determine if hazards are present, if hazards are likely to be present and which necessitate the use of PPE. The attachment following this section will be used to fulfill this assessment. Also the knowledge of the PPE requirements specified in other documents which address chemical-specific materials such as asbestos and lead will be used to assess PPE requirements.
2. OSI, Inc. will select and have each affected employee use the types of PPE that will protect the employee from the hazards which are identified in the hazard assessment.
3. OSI, Inc. will communicate the selection decisions to each affected employee.
4. OSI, Inc. will select the PPE that properly fits each affected employee.
5. Responsible OSI, Inc. management/supervision will verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace which was evaluated, the person certifying that the evaluation has been performed, and the date of the hazard assessment.

JOB-SPECIFICATION PROTECTION

1. Eye and Face Protection
 - A. Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment. Various types of protectors suitable for the work to be performed shall be made conveniently available and personnel shall use such protectors. No unprotected person shall knowingly be subjected to a hazardous environmental condition based upon a hazard assessment. Suitable eye protectors shall be provided where equipment or operations present the hazard of flying objects, glare, liquids, injuries, or a combination of these hazards.
 - B. OSI, Inc. will issue eye and face protection to all employees thus ensuring that the design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1-1989. Contact lenses or Federal

Drug Administration (FDA) standard hardened or plastic lenses shall not be considered as eye protection as required by this instruction.

- C. Persons whose vision requires the use of corrective lenses in spectacles, and who are required to wear eye protection, shall wear goggles or spectacles of one of the following types:
- Spectacles with protective lenses which provide optical correction.
 - Goggles that can be worn over corrective spectacles without adversely affecting the vision provided by the spectacles.
 - Goggles that incorporate corrective lenses mounted behind the protective lenses.
- D. Every protector shall be distinctly marked with the identification of the manufacturer.
- E. Eye and face protection shall be provided when machines or operations present potential eye or face protection shall be provided when machines or operations present potential eye or injury.
- F. Eye and face protective equipment shall meet the requirements of ANSI Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection.
- G. Employees involved in welding operations shall be furnished with filter lenses or plates of at least the proper shade number
- H. Employees exposed to laser beams shall be furnished suitable laser safety goggles that will protect for the specific wave length of the laser and the optical density adequate for the energy involved.

3. Head Protection

Head gear, designed to protect the worker against impact and penetration from objects, (including situations of falling or flying objects, crane operations, etc.) and limited electric shock and burn, shall be used in situations in which such hazards exist. Head gear shall meet the requirements and specifications established by the American National Standards Institute (ANSI), Safety Requirements for Industrial Head Protection, Z89.1-1986.

4. Foot Protection

Foot protection shall be provided, as required, for workers involved in activities which present hazards such as rolling equipment, dropped or falling objects, acid or caustic solutions, etc.

Safety-toe footwear shall meet the requirements and specifications in the ANSI standard Men's Safety-Toe Footwear, Z41.1-1991.

5. Electrical Worker Protection

Based upon the hazard assessment OSI, Inc. will provide employees with protective equipment as required for electrical workers. OSI, Inc. will ensure protective equipment is maintained in a safe reliable condition and through periodic inspections will ensure employees are performing daily inspections of their equipment.

6. Hearing Protection

OSI, Inc. will use appropriate Administrative and Engineering Controls wherever possible for mitigating hazards and protecting personnel. Specific requirements for dealing with noise exposure are found in the Hearing Conservation Program in another section of the manual. Requirements of this program meet or exceed those found in 29 CFR §1926.101. Protection against the effects of noise exposure shall be provided when the sound levels and exposure duration exceed the levels specified in 29 CFR §1926.101. The protection shall include feasible administrative or engineering controls or personal protective equipment. In addition, a Hearing Conservation Program shall be administered if employee noise exposures equal or exceed specified values.

7. Hazardous Material Protection

Protective equipment shall be provided to all employees assigned to handle hazardous material in their work assignment as specified in 29 CFR §1910.120. The specific equipment shall depend upon an evaluation of the hazardous substances and health hazards involved and their chemical and physical properties.

A. HAZWOPER

The specific PPE program in 29 CFR §1926.65 (g)(5) will be followed when it pertains to HAZWOPER activity and includes:

- PPE selection based upon site hazards
- Use and limitations of the equipment
- Work mission duration
- Maintenance and storage
- Decontamination and disposal
- Training and proper fitting
- Donning and doffing procedures
- Inspection procedures prior to, during, and after use
- Evaluation of the effectiveness of the PPE program, and
- Limitations during temperature extremes, heat stress, and other appropriate medical considerations

8. Fall Protection

Protection from falls at temporary elevated work stations shall be provided by safety harness, lifelines and lanyards in accordance with specifications referenced in 29 CFR 1926.500 - .503 and instructions noted in Fall Protection Refer to the OSI, Inc. Fall Protection Program.

One Source Integration, Inc.

Hearing Conservation

- Purpose:** Conservation of hearing is achieved through preventative measures. To reduce occupational hearing loss, all employees, who work in potentially noisy areas, are provided hearing protection, training and annual hearing tests.
- Scope:** This policy applies to all OSI, Inc. employees who work in potentially noisy areas.
- Reference:** OSHA Occupational Noise Exposure Standard 29 CFR, Subpart G, §1910.95.

Responsibilities

Management

- Use Engineering and Administrative controls to limit employee exposure
- Provide adequate hearing protection for employees
- Post signs and warnings for all high noise areas
- Conduct noise surveys annually or when new equipment is added
- Conduct annual hearing tests for all employees
- Conduct hearing conservation training for all new employees
- Conduct annual hearing conservation training for all employees

Employees

- Use company provided, approved hearing protection in designated high noise areas
- Request new hearing protection when needed
- Exercise proper care of issues hearing protection

Training

At time of hire and annually thereafter, all affected employees must attend Hearing Conservation Training.

1. Rules and procedures
2. Where hearing protection is required
3. How to use and care for hearing protectors
4. How noise affects hearing and hearing loss

Engineering Controls

After it is determined that noise exposure above 85 dB(A) are present, engineering controls should be evaluated and implemented to reduce the noise exposure before administrative controls are initiated. Some examples of engineering controls include:

1. Noise reducing baffles
2. Compartmentalization
3. Installing noise reducing gears
4. Installing rubber pads under machinery

When new equipment or machinery is evaluated for purchase, the Construction Manager should be consulted to conduct an evaluation from a safety and health standpoint. One criteria of the evaluation should include the amount of noise the equipment will produce and how it will affect the overall noise exposure.

Administrative Controls

After engineering controls are evaluated for effectiveness or feasibility, administrative controls should be considered to reduce noise exposure. Administrative controls include restricting exposure time or using personal protective equipment (PPE).

Personal Protective Equipment, such as ear plugs or muffs, may be used to reduce the amount of noise exposure. Each plug or muff has a noise reductions factor (NR) as evaluated by ANSI Standards (S3.19 - 1974 or Z24.22 - 1957). For example, if a work area has an ambient noise exposure of 96 dB(A), the hearing protectors should be rated 6 NR or better to be effective.

According to OSHA Regulations, each location with noise exposures of 85 to 89 dB(A) will provide hearing protectors for the Employee's optional use. Noise exposures at 90 dB(A) or above require the mandatory use of hearing protection. Further, OSHA requires that a variety of hearing protectors be available for Employees to choose (both a variety of plug and muff type hearing protectors).

Types of Hearing Protectors

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.

Use of Hearing Protectors

Management, supervision and employees shall properly wear the prescribed hearing protectors while working on a job-site that is designated a High Noise Area (excluding offices, break rooms, and rest facilities). The following rules will be enforced:

- Personal stereos, such as Walkmans, etc., will not be permitted in any operating area of company property.
- Hearing protectors, at least two types of plugs and one type of muffs, will be provided and maintained by the Company.
- Hearing protectors and replacements will be provided free of charge.
- Hearing protectors will be properly worn at all times, except in offices, break rooms, rest facilities.

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 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.

One Source Integration, Inc.

Lockout/Tagout

Purpose: Control of Hazardous energy is the purpose of the Lockout/Tagout Program. This program establishes the requirements for isolation of both kinetic and potential electrical, chemical, thermal, hydraulic and pneumatic and gravitational energy prior to equipment repair, adjustment or removal.

Scope: This policy applies to all employees or contractors working for or on behalf of OSI, Inc.

Reference: OSHA Standard 29 CFR 1910, Subpart J, §1910. 147

General:

Hazards - Improper or failure to use Lockout/Tagout procedures may result in:

- Electrical shock
- Chemical exposure
- Skin burns
- Lacerations & amputation
- Fires & explosions
- Chemical releases
- Eye injury
- Death

Hazard Controls

- Only authorized and trained employees may engage in tasks that require use of lockout/tagout procedures
- All equipment has single sources of electrical power

- Lockout procedures have been developed for all equipment and processes
- Restoration from Lockout is a controlled operation

Definitions

Authorized (Qualified) Employees are the only ones certified to lock and tagout equipment or machinery. Whether an employee is considered to be qualified will depend upon various circumstances in the workplace. It is likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified person, is considered to be "qualified" for the performance of those duties.

Affected Employees are those employees who operate machinery or equipment upon which lockout or tagging out is required under this program. Training of these individuals will be less stringent in that it will include the purpose and use of the lockout procedures.

Other Employees are identified as those that do not fall into the authorized, affected or qualified employee category. Essentially, it will include all other employees. These employees will be provided instruction in what the program is and not to touch any machine or equipment when they see that it has been locked or tagged out.

Training

Authorized Employees Training

All Supervisors and employees will be trained to use the Lockout/Tagout Procedures. The training will be conducted by at time of initial hire. Retraining shall be held at least annually. The training will consist of the following:

- Review of General Procedures
- Review of Specific Procedures for machinery, equipment and processes
- Location and use of Specific Procedures
- Procedures when questions arise

Affected Employee Training

- Only trained and authorized employees will repair, replace or adjust machinery, equipment or processes
- Affected employees may not remove locks, locking devices or tags from machinery, equipment or circuits.

- Purpose and use of the lockout procedures.

Other Employee Training

- Only trained and authorized employees will repair, replace or adjust machinery or equipment.
- Other employees may not remove locks, locking devices or tags from machinery, equipment or circuits

Preparation for Lockout/Tagout Procedures

A Lockout/Tagout survey has been conducted to locate and identify all energy sources to verify which switches or valves supply energy to machinery and equipment. Dual or redundant controls have been removed.

A Tagout Schedule has been developed for each piece of equipment and machinery. This schedule describes the energy sources, location of disconnects, type of disconnect, special hazards and special safety procedures. The schedule will be reviewed each time to ensure employees properly Lockout/Tagout equipment and machinery. If a Tagout Schedule does not exist for a particular piece of equipment, machinery and process, one must be developed prior to conducting a Lockout/Tagout. As repairs and/or renovations of existing electrical systems are made, standardized controls will be used.

Routine Maintenance & Machine Adjustments

Lockout/Tagout procedures are not required if equipment must be operating for proper adjustment. This rare exception may be used only by trained and authorized employees when specific procedures have been developed to safely avoid hazards with proper training. All consideration shall be made to prevent the need for an employee to break the plane of a normally guarded area of the equipment by use of tools and other devices.

Locks, Hasps and Tags

All qualified personnel will be assigned a lock with one key, hasp and tag. All locks will be keyed differently, except when a specific individual issues a series of locks for complex lockout-tagout tasks. In some cases, more than one lock, hasp and tag are needed to completely de-energize equipment and machinery. Additional locks may be checked out from the Supervisor on a need to basis. All locks and hasps shall be uniquely identifiable to a specific employee.

SOP: General Lockout/Tagout Procedures

Before working on, repairing, adjusting or replacing machinery and equipment, the following procedures will be utilized to place the machinery and equipment in a neutral or zero mechanical state.

Preparation for Shutdown - Before authorized or affected employees' turn off a machine or piece of equipment, the authorized employee will have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the means to control the energy.

Notify all affected Employees that the machinery, equipment or process will be out of service

Machine or Equipment Shutdown - The machine or equipment will be turned or shut down using the specific procedures for that specific machine. An orderly shutdown will be utilized to avoid any additional or increased hazards to employees as a result of equipment de-energization.

If the machinery, equipment or process is in operation, follow normal stopping procedures (depress stop button, open toggle switch, etc.).

Move switch or panel arms to "Off" or "Open" positions and close all valves or other energy isolating devices so that the energy source(s) is disconnected or isolated from the machinery or equipment.

Machine or Equipment Isolation - All energy control devices that are needed to control the energy to the machine or equipment will be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.

Lockout or Tagout Device Application - Lockout or tagout devices will be affixed to energy isolating devices by authorized employees. Lockout devices will be affixed in a manner that will hold the energy isolating devices from the "safe" or "off" position.

Where tagout devices are used they will be affixed in such a manner that will clearly state that the operation or the movement of energy isolating devices from the "safe" or "off" positions is prohibited.

The tagout devices will be attached to the same point a lock would be attached. If the tag cannot be affixed at that point, the tag will be located as close as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

Lockout/Tagout all energy devices by use of hasps, chains and valve covers with an assigned individual locks.

Stored Energy - Following the application of the lockout or tagout devices to the energy isolating devices, all potential or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.

Where the re-accumulation of stored energy to a hazardous energy level is possible, verification of isolation will be continued until the maintenance or servicing is complete.

Release stored energy (capacitors, springs, elevated members, rotating fly wheels, and hydraulic/air/gas/steam systems) must be relieved or restrained by grounding, repositioning, blocking and/or bleeding the system.

Verification of Isolation - Prior to starting work on machines or equipment that have been locked or tagged out, the authorized employees will verify that isolation or de-energization of the machine or equipment have been accomplished.

After assuring that no employee will be placed in danger, test all Lockout/Tagout by following the normal start up procedures (depress start button, etc.).

Caution: After Test, place controls in neutral position.

Extended Lockout/Tagout - Should the shift change before the machinery or equipment can be restored to service, the Lockout/Tagout must remain. If the task is reassigned to the next shift, those Employees must Lockout/Tagout before the previous shift may remove their lock and tag.

SOP: Release from LOCKOUT/TAGOUT

Before lockout or tagout devices are removed and the energy restored to the machine or equipment, the following actions will be taken:

- The work area will be thoroughly inspected to ensure that nonessential items have been removed and that machine or equipment components are operational
- The work area will be checked to ensure that all employees have been safely positioned or removed. Before the lockout or tagout devices are removed, the affected employees will be notified that the lockout or tagout devices are being removed.
- Each lockout or tagout device will be removed from each energy isolating device by the employee who applied the device.

SOP: LOTO Procedure for Electrical Plug-Type Equipment

This procedure covers all Electrical Plug-Type Equipment such as Battery Chargers, some Product Pumps, Office Equipment, Powered Hand Tools, Powered Bench Tools, Lathes, Fans, etc.

When working on, repairing, or adjusting the above equipment, the following procedures must be utilized to prevent accidental or sudden startup:

- Unplug Electrical Equipment from wall socket or in-line socket.

- Attach "Do Not Operate" Tag and Lock on end of power cord.

Note: An exception is granted to not lock & tag the plug if the cord & plug remain in the exclusive control of the Employee working on, adjusting or inspecting the equipment.

- Test Equipment to assure power source has been removed by depressing the "Start" or "On" Switch.
- Perform required operations.
- Replace all guards removed.
- Remove Lock & Plug Box and Tag.
- Inspect power cord and socket before plugging equipment into power source. Any defects must be repaired before placing the equipment back in service.

Note: Occasionally used equipment may be unplugged from power source when not in use.

SOP: LOTO Procedures Involving More Than One Employee

In the preceding SOPs, if more than one employee is assigned to a task requiring a Lockout/Tagout, each must also place his or her own lock and tag on the energy isolating device(s).

SOP: Management's Removal of Lockout/Tagout

Only the employee that locks and tags out machinery, equipment or processes may remove his/her lock and tag. However, should the employee leave the facility before removing his/her lock and tag, the Supervisor may remove the lock and tag. The Supervisor must be assured that all tools have been removed, all guards have been replaced and all employees are free from any hazard before the lock and tag are removed and the machinery, equipment or process are returned to service. Notification of the employee who placed the lock is required prior to lock removal.

Contractors

Contractors, working on the job-site or company equipment must use this Lockout/Tagout procedure while servicing or maintaining equipment, machinery or processes.

One Source Integration, Inc.

Power and Hand Tools Equipment Safety

Purpose: The policy provides safety guidelines for employees to follow when operating tools and equipment.

Scope: It applies to all employees who use tools as part of their job function. Always follow manufacturer's recommendations, if any are provided. The guidelines below shall not conflict with manufacturer's recommendations or regulatory requirements in any way. Thereby, any statements found in this program conflicting with a government regulation or manufacturer's instruction should immediately be brought to your managers or foreman's attention so the correction can be made accordingly.

References: OSHA standard 29 CFR, Subpart P, §1910.242
OSHA standard 29 CFR, Subpart P, §1910.243

I. Tool Maintenance

- A. Faulty or improperly used hand tools are a safety hazard.
 - 1. Hand tools-- chisels, punches, etc that have developed mushroom heads should be reconditioned or replaced as necessary.
 - 2. Broken or fracture handles on hammers, axes, etc must be replaced.
 - 3. Worn or bent wrenches should be replaced regularly.
 - 4. If unfamiliar with the operation of the tool, employees must request instruction from their team leader before starting the job.
 - 5. Employees must use the correct tool for the work to be performed:
 - a) Job requirements and the hazards involved must be assessed if not already determined.
 - b) If lifting is required, then proper hoisting equipment must be utilized. Do not attempt to lift heavy objects without the proper equipment.
- B. Inspect tools before use for wear or defect.
 - 1. Tool handles must be wedged tightly into the heads of tools and must be the appropriate type.
 - 2. Tool cutting edges must be sharp enough so the tool will move smoothly.

- C. A damaged or malfunctioning tool must not be used.
 - 1. The damaged tool must be turned in for repair and replaced with one that is in good condition to complete the job.
 - 2. Cracked saws shall be removed from service.
- D. Tools must be stored in a dry, secure location.

II. Equipment Switches and Controls

- A. Powered hand tools required to have a constant pressure switch that will shut off power when pressure is released are:
 - 1. Portable Circular Saws having blades that are greater than 2" in diameter
 - 2. Electric, hydraulic or pneumatic chain saws
 - 3. Percussion tools
 - 4. Gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off power when pressure is released.
- B. Powered hand tools required to have constant pressure switch as above, may also have lock-on control. To turn off this control, the motion **must** be accomplished with single motion of the same finger or fingers that turned it on. Examples of these tools are:
 - 1. Drills, tappers, fastener drivers
 - 2. Horizontal, vertical and angle grinders with wheels greater than 2" in diameter
 - 3. Disc sanders with discs greater than 2" in diameter
 - 4. Belt sanders
 - 5. Reciprocating saws
 - 6. Saber, scroll and jig saws with blade shanks greater than ¼" (± 0.05 ")
 - 7. Similarly operating power tools
- C. Other hand held tools may have "on-off" control or one of the above controls.
- D. Location of operating controls must minimize the possibility of its accidental operation, if such operation would be hazardous to employees.

III. Machine Guarding - All grinders, saws and similar equipment should be equipped with appropriate safety guards. If the appropriate guards, correct shields or attachments are not in place, then the power tools should not be used.

- A. Portable circular saws must be equipped with guard above and below the base shoe.

1. Guards must be checked periodically and before each use to assure they are not wedged up, thus leaving lower portion of the blade unguarded.
 2. When tool is removed from work the lower guard shall automatically return to covering position.
- B. All rotating or moving parts of equipment should be guarded to prevent physical contact.
 - C. Effective guards must be in place over belts, pulleys, chains, sprockets, etc.
 - D. Portable fans must be equipped with full guards or screens having openings ½ inch or less.

IV. Battery Operated Power Tools

- A. Employees must not underestimate the power of battery-powered tools.
 1. These tools can still cause severe injury if they land in the wrong place.
 2. Battery pack contains toxic chemicals and does emit a low voltage electric current.
- B. Don't drop or incinerate the batter pack, or a tool with a self-contained power source.

V. Electrically Wired Equipment (fixed or portable)

- A. Electrical powered tools pose a double safety problem -- equipment and electrical power source.
- B. Ground-fault circuit interrupters must be provided on all temporary electrical 15 and 20-ampere circuits used during periods of construction, or in wet environments.
- C. Any extension cord used with a grounded tool must be a three-wire, grounded type.
- D. Portable tools shall meet all electrical grounding requirements necessary and be used with an effectively grounded circuit.

VI. Pneumatic / Hydraulic Powered Tools and Hoses

- A. Hoses must be checked regularly for deterioration or damage.
- B. A tool retainer must be used to prevent tools from being ejected during use.

- C. Hose & hose connectors must be designed for the pressure and service required.

VII. Compressors

- A. All compressors must be equipped with pressure relief valves and pressure gauges.
- B. All compressor air intakes must be installed and equipped to ensure that only clean, uncontaminated air enters the compressor.
- C. The inlet of air receivers and piping systems must be kept free of accumulated oil and carbonaceous materials.
- D. Every air receiver must be provided with a drain pipe and valve at the lowest point for the removal of accumulated oil and water.
- E. Compressed air receivers must be periodically drained of moisture and oil.
- F. All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.
- G. A current operating permit issued by the Division of Occupational Safety and Health shall be maintained.

VIII. Abrasive Wheel Equipment (Grinders)

- A. Work rest should be kept adjusted to within $\frac{1}{8}$ " of the wheel.
- B. Adjustable tongue on the topside of the grinder should be kept adjusted to within $\frac{1}{4}$ " of the wheel.
- C. Side guards should cover the spindle, nut and flange and 75 % of the wheel diameter.
- D. Maximum RPM rating of each abrasive wheel should be compatible with the RPM rating of the grinder motor.
- E. Fixed or permanently mounted grinders must be connected to the electrical supply system with metallic conduit or by other permanent wiring method.
- F. Each grinder should have an individual on and off control switch that is easily accessible anytime you operate the machine.
- G. Do not defeat the grounding mechanism of electrically operated grinders by using non-three prong plug adapters.

- H. Visually inspect and ring test new abrasive wheels.
- I. Use the dust collectors and powered exhausts provided on grinders in operations that produce large amounts of dust.
- J. Splashguards must be mounted on grinders that use a coolant.
- K. Keep your work areas clean at all times.

IX. Welding, Cutting and Brazing

- A. Only authorized and trained personnel are permitted to use welding, cutting or brazing equipment.
- B. All operators must have a copy of the appropriate operating instructions and follow them.
- C. Use care in handling and storing cylinders.
 - 1. Compressed gas cylinders should be regularly examined for obvious signs of defects, deep rusting, or leakage, and to check safety valves, relief valves and the like, to prevent damage.
 - 2. Cylinders must be kept away from sources of heat.
 - 3. It is prohibited to use cylinders as rollers or supports.
 - 4. Empty cylinders must be appropriately marked, their valves closed and valve-protection caps on.
 - 5. Signs reading: DANGER-NO SMOKING, OR OPEN FIRES, or their equivalent must be posted.
 - 6. Cylinders, cylinder valves, couplings, regulators, hoses and apparatus must be kept free of oily or greasy substances.
 - 7. Care must be taken not to drop or strike cylinders.
 - 8. Unless secured on special trucks, all regulators must be removed and valve-protection caps put in place before moving cylinders.
 - 9. All cylinders without fixed hand wheels must have keys, handles, or non-adjustable wrenches on stem valves when in service.
 - 10. Liquefied gases must be stored and shipped valve-end up with valve covers in place.
 - 11. Before a regulator is removed, the valve must be closed and gas released from the regulator.
 - 12. All employees are instructed never to crack a fuel-gas cylinder valve near sources of ignition.

- D. Red is used to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose. All pressure-reducing regulators must be used only for the gas and pressures for which they are intended.
- E. The open circuit (No Load) voltage of arc welding and cutting machines must be as low as possible and not in excess of the recommended limits.
- F. Precaution must be taken to prevent mixture of air or oxygen with flammable gases, except at a burner or in a standard torch. Only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) may be used.
- G. Under wet conditions, automatic controls for reducing no-load voltage must be used.
- H. Grounding of the machine frame and safety ground connections of portable machines must be checked periodically.
- I. Electrodes must be removed from the holders when not in use.
- J. All electric power to the welder must be shut off when no one is in attendance.
- K. Suitable fire extinguishing equipment must be available for immediate use before starting to ignite the welding torch.
- L. The welder is strictly forbidden to coil or loop welding electrode cable around his/her body.
- M. All wet welding machines must be thoroughly dried and tested before being used.
- N. All work and electrode lead cables must be frequently inspected for wear and damage, and replaced when needed.
- O. All connecting cable lengths must have adequate insulation.
- P. When the object to be welded cannot be moved and fire hazards cannot be removed, shields must be used to confine heat, sparks and slag.
- Q. Firewatchers will be assigned when welding or cutting is performed in locations where a serious fire might develop.
- R. Check for adequate ventilation where welding or cutting is performed.
- S. When working in confined spaces, environmental monitoring tests should be taken and means provided for quick removal of welders in case of emergency.

X. Hoists and Auxiliary Equipment

- A. Every overhead electrical hoist shall be equipped with a limit device to stop the hook travel at its highest and lowest points of safe travel. Check these limits without a load to ensure the device is working correctly.
- B. Each hoist should automatically stop and hold any load up to 125 percent of its rated load if its actuating force is removed.
 - 1. Check this periodically under controlled conditions.
 - 2. Make sure that the rated load of each hoist is legibly marked and visible to the operator.
- C. Stops should be provided at the safe limits of travel for trolley hoists.
- D. The controls of hoists should be plainly marked to indicate direction of travel or motion.
- E. Every cage-controlled hoist must be equipped with an effective warning device.
- F. Close-fitting guards or other suitable devices should be installed on hoists to assure hoist roped will be maintained in the sheave grooves.
- G. All hoist chains or ropes must be of sufficient length to handle the full range of movement for the application, while maintaining two full wraps on the drum at all times.
- H. All nip points or contact points between hoist ropes and sheaves which are permanently located within 7 feet of the floor; ground or working platform must be guarded.
- I. It is prohibited to use chains or rope slings that are kinked or twisted.
- J. The operator should avoid carrying loads over people.
- K. Only employees who have been trained in the proper use of hoists are allowed to operate them.

XI. Jacks

- A. The rated load limit must be permanently marked in a prominent position on the jack and weight of loads must fall under this limit.

- B. Jack must be firmly secured on foundation.
- C. If there is a possibility of slippage of the cap, a block shall be placed in between the cap and the load.
- D. Operator must be able to see and watch the stop indicator to determine the limit of travel.
- E. Load must be secured when raised.
- F. Jacks must be lubricated at regular intervals.
- G. Jacks must be thoroughly inspected once every 6 months, when sent for and returned from service, and before and after it's used for an abnormal load or shock.
- H. Repair or replacement parts must be inspected.
- I. Jacks that are in need of repair must be marked not operational.
- J. Hydraulic jacks must be supplied with adequate antifreeze liquid if in freezing temperatures.

XII. Personal Protective Equipment

- A. Appropriate goggles or face shield should always be worn when grinding or using other equipment that might produce flying materials or be subject to breakage.
- B. Eye and face protection must be worn when driving in tempered studs and nails.
- C. Approved eye protection must be worn by anyone entering and /or passing through shop areas.
- D. Employees exposed to the hazards created by welding, cutting or brazing operations must be protected with personal protective equipment and clothing. It is required that eye protection helmets, hand shields, and goggles meet appropriate standards.

XIII. Training

- A. Employees must be properly trained in the use of all equipment they are required to operate.
- B. Training in the use of specific equipment should include:

1. Proper maintenance
2. Recognizing defects
3. Manufacturer's recommendations
4. Applicable machine guarding
5. Personal Protective Equipment
6. Power Sources
7. Potential fire or electrical hazards

One Source Integration, Inc.

Confined Space

Permit-Required

- Purpose:** The purpose of this policy is to ensure a safe and healthy working environment for all OSI, Inc. employees. Therefore, a policy is established to ensure that employees are safeguarded against dangers while performing work in a permit-required confined space. Every effort will be made to comply with this regulation.
- Scope:** This program includes all employees who may be required to perform work in any space not intended for continuous occupancy, having a limited means of egress, and which may contain a potentially hazardous atmosphere.
- Reference:** OSHA Standard 29 CFR 1910, Subpart J, §1910.146
OSHA Standard 29 CFR 1910, Subpart Z, §1910.1200
- Designation:** The Supervisor is designated to administer the Permit-Required Confined Space Program.
- Location:** The written Permit-Required Confined Space Program will be located in the Safety Officer's office. This program will be available for review by all employees and authorized representatives.

Work Site Evaluation

1. The Supervisor will evaluate the work site to determine which areas are to be considered permit required confined spaces. The Decision Flow Chart in Attachment 2 will be used to facilitate compliance with this program.
2. If the work site contains permit spaces, all employees will be informed by the Supervisor by the posting of danger signs that read:

DANGER - PERMIT-REQUIRED CONFINED SPACE

DO NOT ENTER

3. If the decision is made that employees will not enter permit spaces, effective measures will be taken to prevent employees from entering the permit spaces.

4. If the decision is made that employees will enter permit spaces, a written permit will be completed. The written permit program is available for review by all employees.
5. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the Supervisor will reevaluate that space and, if necessary, reclassify it as a permit-required confined space.
6. A space classified as a permit-required confined space may be reclassified as a non-permit confined space under the following conditions:
 - a. If the permit space poses no actual or potential atmospheric hazards and all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.
 - b. If testing and inspection of the permit space reveals that the hazards have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

- c. The basis for determining that all hazards in a permit space have been eliminated will be documented by a certification. This certification will contain the date, the location of the space, and the signature of the person making the determination. The certification will be made available to each employee entering the space.
 - d. If hazards arise within a permit space that has been declassified to a non-permit space, each employee in the space will exit the space. Reevaluation of the space will be accomplished and a determination made as to whether it must be reclassified as a permit space.
7. When employees other than those working for OSI, Inc. are involved in sharing work that involves permit space entry, the Supervisor or designee or the work site Supervisor will ensure that the host employer will comply with all the requirements contained in 29 CFR §1910.146.

Permit-Required Confined Space

Under the permit-required confined space program, the Supervisor or designee will ensure that the following actions are accomplished:

1. Implement the measures necessary to prevent unauthorized entry.

2. Identify and evaluate the hazards of permit spaces before employees enter them.
3. Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:
 - a. Specifying acceptable entry conditions.
 - b. Isolating the permit space.
 - c. Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
 - d. Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
 - e. Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
4. Provide the following equipment at no cost to employees, maintain that equipment properly, and ensure that employees use that equipment properly.
 - a. Required testing and monitoring equipment.
 - b. Ventilating equipment needed to obtain acceptable entry conditions.
 - c. Required communications equipment.
 - d. Personal protective equipment insofar as feasible engineering and work practice controls does not adequately protect employees.
 - e. Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.
 - f. Required barriers and shields.
 - g. Equipment, such as ladders, needed for safe ingress and egress by authorized entrants.
 - h. Required rescue and emergency equipment except that equipment provided by rescue services.
 - i. Any other equipment necessary for safe entry into and rescue from permit spaces.
5. Evaluate permit space conditions as follows when entry operations are conducted:
 - a. Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working.
 - b. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.

- c. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.
6. If a person must enter a confined space containing hazardous gases, the procedure below must be followed:
 - a. Protective equipment must be worn, including air supply respirator plus harness and lifeline.
 - b. Communication with personnel in the confined space must be continually maintained.
7. Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations.

NOTE: Attendants may be assigned to monitor more than one permit space provided their duties can be effectively performed for each permit space that is monitored. Likewise, attendants may be stationed at any location outside the permit space to be monitored as long as their duties can be effectively performed for each permit space that is monitored.

8. If multiple spaces are to be monitored by a single attendant, include in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of the permit spaces being monitored without distraction from the attendant's responsibilities.
9. Designate the persons who are to have active roles (for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations, identify the duties of each such employee, and provide each such employee with the required training.
10. Develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue.
11. Develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required.
12. Develop and implement procedures to coordinate entry operations when employees of more than one employer are working simultaneously as authorized entrants in a permit space, so that employees of one employer do not endanger the employees of any other employer.
13. Develop and implement procedures (such as closing off a permit space and canceling the permit) necessary for concluding the entry after entry operations have been completed.

14. Review entry operations when the Supervisor has reason to believe that the measures taken under the permit space program may not protect employees and revise the program to correct deficiencies found to exist before subsequent entries are authorized. Examples of circumstances requiring the review of the permit-required confined space program are as follows:
 - a. Any unauthorized entry of a permit space.
 - b. The detection of a permit space hazard not covered by the permit.
 - c. The detection of a condition prohibited by the permit.
 - d. The occurrence of an injury or near miss during entry.
 - e. A change in the use or configuration of a permit space.
 - f. Employee complaints about the effectiveness of the program.
15. Perform a single annual review covering all entries performed during a twelve-month period. If no entry was performed during a twelve-month period, a review will still be completed.

Permit System

1. Before entry is authorized, the Supervisor will document the completion of measures required by preparing an entry permit. (See attachment 5 for a sample of an Entry Permit).
2. Before entry begins, the entry supervisor identified on the permit will sign the entry permit to authorize entry.
3. The completed permit will be made available at the time of entry to all authorized entrants by posting it at the entry portal.
4. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.
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.
 - b. A condition that is not allowed under the entry permit arises in or near the permit space.
6. The Supervisor or designee will ensure that each canceled entry permit is retained for at least one year in order to facilitate the review of the permit-required space program. Any problems encountered during an entry operation will 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 the Permit-Required Confined Space Program and authorized entry to a permit space will 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 permitted space, by name in order that the attendant is able to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside 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.
9. The acceptable entry conditions.
10. The results of initial and periodic tests performed 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 these 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 proper compliance.
14. Any other information, given the circumstances of the particular confined space, in order to ensure employee safety.
15. Any additional permits, such as for hot work that have been issued to authorize work in the permit space.

Training

1. The Supervisor or designee will provide training in order that all employees who are affected by this program acquire the understanding, knowledge, and skills necessary for the safe performance of their assigned duties.
2. Training will be provided to each affected employee:
 - a. Before the employee is first assigned duties covered by this program.
 - b. Before there is a change in assigned duties.
 - c. Whenever there is reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
3. Training Rescue Teams: Rescue Teams will be trained to use the equipment they may need to perform rescue functions assigned to them.
 - a. At least annually, rescue teams will practice removing victims through openings and portals of the same size, configuration and accessibility as those of spaces from which an actual rescue could be required.
 - b. The attendant or at least one member of each rescue team will hold current certification in basic first aid and CPR (Cardio Pulmonary Resuscitation).
4. The training will establish employee proficiency in his/her assigned duties as required and will introduce new or revised procedures, as necessary, for proper compliance with this program.
5. Accomplishment of required training will be certified. The certification will contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certification will be available for inspection by employees and their authorized representatives.

Duties of Authorized Entrants

The Supervisor will ensure that all authorized entrants:

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.
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.
4. Alert the attendant whenever:

- a. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
 - b. The entrant detects a prohibited condition.
5. Exit from the permit space as quickly as possible whenever:
- a. An order to evacuate is given by the attendant or the entry supervisor.
 - b. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
 - c. The entrant detects a prohibited condition
 - d. An evacuation alarm is activated.

Duties of Attendants

The Supervisor will ensure that each attendant:

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 accurately identifies who is in the permit space.
4. Remains outside the permit space during entry operations until relieved by another attendant.
5. Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
6. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and order 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.
 - d. If the attendant cannot effectively and safely perform all required duties.
7. Summons 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 an unauthorized person approaches or enters 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.
 - c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered permit space.
9. Performs non-entry rescues as specified by the Supervisor.
10. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Duties of Entry Supervisor

The entry supervisor shall:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2. Verify, 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. Terminate the entry and cancel the permit as required.
4. Verify that rescue services are available and that the means for summoning them are operable.
5. Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
6. Determine whenever responsibility for a permit space entry operation is transferred. At intervals dictated by the hazards and operations performed within the space, determines that the entry operations remain consistent with the terms on the entry permit and that acceptable entry conditions are maintained.

Special Equipment and Tools

1. No sources of ignition will be introduced into a confined space until the implementation of the appropriate provision of this section has ensured that dangerous air contamination due to flammable and/or explosive substances does not exist.
2. All electrical cords, tools, and equipment will be inspected for visually detectable defects before use in a confined space. In the absence of low voltage circuits and equipment or double insulated tools, equipment shall be of the heavy-duty insulation type or ground fault circuit interrupters shall be used. Temporary lighting shall conform to §1926.405 (a)(2)(ii)(G).
3. No fan or other equipment used for removing flammable gases or vapors will create an ignition hazard.
4. Cylinders of compressed gases shall never be taken into a confined space, and shall be turned off at the source when not in use. When left unattended the torch and hose shall be removed from the confined space. Open-end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device. Exempt from this rule are cylinders that are part of self-contained breathing apparatus or resuscitation equipment.
5. When equipment which utilizes oxygen, such as salamanders, torches or furnaces, are used in a confined space, adequate ventilation must be provided to guarantee oxygen content and combustion for the equipment.
 - a. When this equipment is used, adequate measures must be taken to assure that exhaust gases are vented outside the enclosure.
 - b. Torches must be lit outside the confined space area.
 - c. The atmosphere must be tested each time before lighting a torch
6. When gas welding or burning is used, hoses must be checked for leaks.

Rescue and Emergency Services

1. Employees are not allowed to enter permit spaces to perform rescue services. Rescue and emergency services within the permit space will be performed only by properly trained personnel who are summoned to render assistance.
2. To facilitate non-entry rescue, retrieval systems or methods will be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems will meet the following requirements:

- a. 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, or above the entrant's head. Wristlets may be used in lieu of the chest or full body harness if it can be demonstrated 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 most effective alternative.
 - b. The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit spaces more than five feet deep.
3. If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the work site, that MSDS or written information will be made available to the medical facility treating the exposed entrant.

Enforcement **In order to ensure proper compliance with this program, progressive discipline will be administered in situations where employees compromise safety practices.**

Responsibility

1. It is the responsibility of the Supervisor or designee to ensure compliance with this policy by all persons covered by it, thus safeguarding employees' safety and health in accordance with 29 CFR §1910.146 - Permit-Required Confined Space.
2. It is the responsibility of each employee to comply with this policy and training outlined in this program.

Attachments

1. Definitions
2. Decision Flow Chart
3. Confined Space Pre-Entry Check List
4. Pre-Entry/Entry Check List
5. Entry Permit

ATTACHMENT 1

DEFINITIONS

ACCEPTABLE ENTRY CONDITIONS: The conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

ATTENDANT: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

AUTHORIZED ENTRANT: An employee who is authorized by the employer to enter a permit space.

BLANKING OR BLINDING: The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe line, or duct with no leakage beyond the plate.

CONFINED SPACE: A space that:

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

DOUBLE BLOCK AND BLEED: The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

EMERGENCY: Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

ENGULFMENT: The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

ENTRY: The action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

ENTRY PERMIT (PERMIT): The written or printed document that is provided by the employer to allow and control entry into a permit space and that contains required information in accordance with 29 CFR 1910.146.

ENTRY SUPERVISOR: The person (such as the Supervisor/Supervisor) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required.

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 for each role he/she fills. In addition, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

HAZARDOUS ATMOSPHERE: An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury or acute illness from one or more of the following causes:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL.

NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of five feet or less.

- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart g, Occupational Health and Environmental Control, or in Subpart z, Toxic and Hazardous Substance, of this part which could result in employee exposure in excess of its dose or permissible exposure limit.

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability of self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- (5) Any other atmospheric condition that is immediately dangerous to life or health.

NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard 29 CFR §1910.1200, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

HOT WORK PERMIT: The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH): Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

NOTE: Some materials - hydrogen fluoride gas and cadmium vapor, for example - may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12 - 72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered "immediately" dangerous to life or health.

INERTING: The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.

ISOLATION: The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as blanking or blinding, misaligning or removing sections of lines, pipes, or ducts, a double block and bleed system, lockout or tagout of all resources of energy, or blocking or disconnecting all mechanical linkages.

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

NON-PERMIT CONFINED SPACE: A confined space that does not contain or, with respect to atmospheric hazards, has the potential to contain any hazard capable of causing death or serious physical harm.

OXYGEN DEFICIENT ATMOSPHERE: An atmosphere containing less than 19.5 percent oxygen by volume.

OXYGEN ENRICHED ATMOSPHERE: An atmosphere containing more than 23.5 percent oxygen by volume.

PERMIT-REQUIRED CONFINED SPACE (PERMIT SPACE): A confined space that has one or more of the following characteristics:

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

PERMIT-REQUIRED CONFINED SPACE PROGRAM: The employer's overall program for controlling, and, when appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

PERMIT SYSTEM: The employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

PROHIBITED CONDITION: Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

RESCUE SERVICE: The personnel designated to rescue employees from permit spaces.

RETRIEVAL SYSTEM: The equipment (including a retrieval line, chest or full body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

TESTING: The process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately before, and during, entry.

ATTACHMENT 3.

Confined Space Pre-Entry Check List

See Safety Procedure

A confined space is entered through an opening other than a door (such as a manhole or side port) or requires the use of a ladder or rungs to reach the working level and test results are satisfactory. This checklist must be filled out whenever the job site meets these criteria.

- | | YES | NO |
|--|-----|-----|
| 1. Did your survey of the surrounding area show it to be free of hazards such as drifting vapors from tanks, piping or sewers? | () | () |
| 2. Does your knowledge of industrial or other discharges indicate this area is likely to remain free of dangerous air contaminants while occupied? | () | () |
| 3. Are you certified in operation of the gas monitor to be used? | () | () |
| 4. Has a gas monitor functional test (Bump Test) been performed this shift on the gas monitor to be used? | () | () |
| 5. Did you test the atmosphere of the confined space before entry? | () | () |
| 6. Did the atmosphere check as acceptable (no alarms given)? | () | () |
| 7. Will the atmosphere be continuously monitored while the space is occupied? | () | () |

Call 911 for personnel rescue by local fire department in the event of an emergency.

If any of the above questions are answered "no" do not enter. Contact your Supervisor.

Job: _____

Location: _____

Signature: _____

Supervisor / Supervisor

Date

ATTACHMENT 4

Confined Space Entry Permit (Pre-Entry/Entry Check List)

Date and Time Issued: _____

Job site: _____

Equipment to be worked on: _____

Pre-Entry (See Safety Procedure)

1. Atmospheric Checks:

Time _____

Oxygen _____%

Explosive _____% LFL

Toxic _____ PPM

2. Source isolation No Entry:

Pumps or lines blinded
disconnected or blocked

N/A	Yes	No
()	()	()
()	()	()

3. Ventilation Modification:

Mechanical
Natural Ventilation only

N/A	Yes	No
()	()	()
()	()	()

4. Atmospheric check after isolation and Ventilation:

Oxygen _____% > 19.5%

Explosive _____% LFL < 10 %

Toxic _____ PPM < 10 PPM H²S

Time _____

If conditions comply with the above requirements and there is no reason to believe conditions may change adversely, then proceed to the Permit Space Pre-Entry Check List. Complete and post with this permit. If conditions do not comply with the above requirements or there is reason to believe that conditions may change adversely, proceed to the Entry Check-List portion of this permit.

Date and Time Expires: _____

Job Supervisor _____

Work to be performed: _____

Entry (See Safety Procedure)

1. Entry, standby, and back up person:	Yes	No
Successfully completed required training?	()	()
Is it current?	()	()

2. Equipment:	N/A	Yes	No
Direct reading gas monitor - tested	()	()	()
Safety harnesses and lifelines for entry and standby persons	()	()	()
Hoisting equipment	()	()	()
Powered communications	()	()	()
SCBA's for entry and standby	()	()	()
Protective Clothing	()	()	()
All electric equipment listed Class I, Division I, Group D and Non-sparking tools	()	()	()

3. Rescue Procedure: _____

We have reviewed the work authorized by this permit and the information contained here in. Written instructions and safety procedures have been received and are understood: Entry cannot be approved if any squares are marked in the "NO" column. This permit is not valid unless all appropriate items are completed.

Permit and Checklist Prepared By: (Supervisor) _____
Signature Date

Approved By: (Unit Supervisor) _____
Signature Date

Reviewed By: (Confined Space Operations Personnel): _____
Signature

Date

This permit is to be kept at the job location. Return permit to the safety director following job completion.

_____ CONFINED SPACE _____ HAZARDOUS AREA

PERMIT VALID FOR 8 HOURS ONLY. ALL COPIES OF PERMIT WILL REMAIN AT JOB SITE UNTIL JOB IS COMPLETED.

SITE LOCATION AND DESCRIPTION

PURPOSE OF ENTRY _____ SUPERVISOR(S)
in charge

BOLD DENOTES MINIMUM REQUIREMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY

REQUIREMENTS COMPLETED	DATE	TIME	REQUIREMENTS COMPLETED	DATE
Lock Out/De-energize/Try-out	_____	_____	Full Body Harness w/"D" ring	_____
Line(s) Broken-Capped-Blanked	_____	_____	Emergency Escape Retrieval Equip	_____
Purge-Flush and Vent	_____	_____	Lifelines	_____
Ventilation	_____	_____	Fire Extinguishers	_____
Secure Area (Post and Flag)	_____	_____	Lighting (Explosive Proof)	_____
Breathing Apparatus	_____	_____	Protective Clothing	_____
Resuscitator - Inhalator	_____	_____	Respirator(s) (Air Purifying)	_____
Standby Safety Personnel	_____	_____	Burning and Welding Permit	_____

Note: Items that do not apply enter N/A in the blank.

**** RECORD CONTINUOUS MONITORING RESULTS EVERY 2 HOURS**

CONTINUOUS MONITORING** TEST(S) TO BE TAKEN	Permissible Entry Level							
PERCENT OF OXYGEN	19.5 % TO 23.5%							
LOWER FLAMMABLE LIMIT	Under 10%							
CARBON MONOXIDE	+35 PPM							
Aromatic Hydrocarbon	+ 1 PPM * 5 PPM							
Hydrogen Cyanide	(Skin) * 4							

	PPM							
Hydrogen Sulfide	+10 PPM *15 PPM							
Sulfure Dioxide	+ 2 PPM * 5 PPM							
Ammonia	*35 PPM							

* Short-term exposure limit: Employee can work in the area up to 15 minutes.
+ 8 hr. Time Weighted Avg.: Employee can work in area 8 hrs (longer with appropriate respiratory protection).

REMARKS:

GAS TESTER NAME & CHECK # INSTRUMENT(S)
USED MODEL &/OR TYPE SERIAL &/OR UNIT # _____

SAFETY STANDBY PERSON IS REQUIRED FOR ALL CONFINED SPACE WORK:

SAFETY STANDBY PERSON (S) CHECK #: _____

SUPERVISOR AUTHORIZING ENTRY: _____

ALL ABOVE CONDITIONS SATISFIED: _____

DEPARTMENT PHONE: _____

SUPERVISOR PHONE: _____

AMBULANCE PHONE: _____

FIRE STATION PHONE: _____

GAS COMPANY PHONE: _____

One Source Integration, Inc.

Scaffolds & Ladders

- Purpose:** This policy provides the minimum requirements for the construction and erection of scaffolds and ladders.
- Scope:** This instruction is applicable to all OSI, Inc. employees and contractors working under the direct supervision of One Source Integration, Inc.
- Reference:** OSHA standard 29 CFR, Subpart L, §1926.450
OSHA standard 29 CFR, Subpart X, §1926.1053

General Requirements

The following requirements are applicable to all scaffolds:

Guardrails and Toeboards

1. Guardrails shall be constructed with 2" x 4" lumber, ½ inch wire rope, angle iron or the prefabricated rail supplied by the scaffold manufacturer.
2. Toprails shall be not less than 36 inches or more than 42 inches above the working surface.
3. Midrails shall be approximately 21 inches above the working surface.
4. Wire rope toprails and midrails shall be stretched tight with no more than an approximate 2 inch deflection.
5. Toeboards shall extend a minimum of 4 inches above the working surface.
6. When the placement of the scaffold or work platform prevents the installation of guardrails, other fall protection equipment shall be used.
7. Guardrails and toeboards shall be installed on all open sides and ends of scaffolds and work platforms that are more than 10 feet above the ground or floor.
8. Scaffolds and work platforms 4 feet to 10 feet high, with a working surface of less than 45 inches in either direction, shall have guardrails. Toeboards are not required.

9. No scaffold shall be erected, moved, or dismantled or altered except under the supervision of a competent person.
10. A competent person, as part of his inspection prior to use of a newly erected scaffold, is to fill out the Scaffold Inspection Checklist.
11. Prior to daily use of scaffolding, a competent person is to make an inspection and sign off a Scaffold Daily Inspection Log.

Working Surfaces

1. Working surfaces shall be constructed of scaffold plank, aluminum picks, or a minimum of $\frac{3}{4}$ inch plywood, of proper thickness to carry the working load, but shall be not less than 2 inches thick full size undressed, exterior grade plywood, at $\frac{3}{4}$ inch thick, or equivalent material.
2. Scaffold plank shall be full cut scaffold grade lumber, with a minimum dimension of 2 inch x 10 inch and free from knots and splits.
3. Working surfaces shall be secured by nails, #9 wire, cleats, or bolts.
4. Scaffold planks shall extend a minimum of 6 inches and a maximum of 12 inches over the end supports or secured from movement.
5. Scaffold planking shall be overlapped a minimum of 12 inches or secured from movement.
6. If required, an access ladder shall be provided.
7. Scaffold planks shall not span more than 8 feet between supports.
8. Scaffold planks and plywood shall be free of splits and burrs.

Scaffold Footing and Anchorage

1. The footing or anchorage shall be capable of carrying the maximum intended load without settling or displacement. Uprights shall be placed on secure bases and maintained plumb.
2. The uprights shall be plumb and securely braced to prevent swaying and displacement.

Special Requirements

The following requirements are applicable to specific types of scaffolds and ladders:

Tubular Welded Frame

1. Scaffold shall be cross braced to assure scaffold is plumb, square, and rigid.
2. Stacking pins shall only be secured with the manufacturer's pins or bolts.
3. Cross braces shall be secured, as designed by the manufacturer.
4. Stationary scaffolds must be secured horizontally, every 30 feet of height, to prevent tipping.
5. The height of rolling scaffolds, measured from the ground to the toprail, shall be no more than four (4) times the minimum base dimension.
6. All wheels shall be the same size, equipped with a positive locking device, and in good condition.
7. Wheels shall be locked while personnel are working from the scaffold.
8. Personnel shall not be permitted on mobile scaffold while the scaffold is being moved.

Tube and Coupler (Tube-Lock)

1. Uprights shall have a maximum spacing of 6 feet.
2. Uprights shall be placed on secure bases and maintained plumb.
3. Horizontal braces shall be installed completely around all exterior uprights and between interior uprights. Braces shall be installed every 6 feet of height.
4. Platform supports shall be coupled directly to the horizontal braces and extend 4 inches to 12 inches beyond the horizontal braces.
5. All horizontal bracing shall be coupled to the uprights, exclusively with a locking coupler of the structural type designed for the tube.
6. Diagonal bracing shall be installed at alternating 45° angles beginning with the corner upright and repeating every 5th upright on the perimeter. An alternating bracing pattern shown in Attachment 5 shall be used.

One and Two Point Suspension Scaffolds

1. Cable shall be securely anchored and softeners used when necessary.
2. Cable shall be insulated at the anchor point, from the motor to 4 feet above the motor, and wherever the cable comes in contact with metal, to prevent electrical arcing.
3. Two-point suspension scaffold platforms shall remain level while being raised or lowered.
4. Knee Brace - Knee brace scaffolding shall be welded by a qualified welder and visually inspected before use.

Ladders

1. Ladders shall extend a minimum of 36 inches above the landing.
2. Extension and job-built ladders shall be secured to prevent falling.
3. Manufactured ladders shall be Class I (minimum) with properly working feet.
4. The slope of the ladder from the base of the support shall be one foot for every 4 feet of vertical distance from the top support of the ladder to the base of the support.
5. All ladders shall be set on firm base to prevent shifting and tipping.
6. Ladders with broken or missing rungs or steps, broken or split side rails, or faulty or defective construction shall not be used.
7. Metal extension ladders shall not be used. Fiberglass extension ladders are mandatory for electrical service tasks; otherwise wood extension ladders are acceptable.
8. Step ladders shall not be used as a leaning ladder.
9. Employees shall not work off the top two steps of a step ladder.
10. Personnel shall have both hands free of tools, materials, or equipment, while climbing and descending ladders.
12. Personnel shall face the ladder when climbing and descending.
13. The top two rungs of a ladder shall not be used to support personnel.

14. Ladders shall be inspected before each use.
15. Semi-Annual inspections will be performed by a competent person using checklist as a guideline and record of inspection.

One Source Integration, Inc.

Fall Protection Program

Purpose: The purpose of this program is to ensure that all construction areas are free from uncontrolled fall hazards; that all employees are properly trained in fall prevention and protection, and that fall prevention systems are inspected and monitored to ensure effectiveness.

Scope: This program applies to all employees exposed to potential falls from heights.

Reference: OSHA standard 29 CFR 1926, Subpart M, §1926.500

Policy:

It is the policy of OSI, Inc. to take all practical measures possible to prevent employees from being injured by falls. We will take necessary steps to eliminate, prevent, and control fall hazards. The first priority is given to the elimination of fall hazards. If a fall hazard cannot be eliminated, effective fall protection shall be planned, implemented, and monitored to control the risks of injury due to falling.

All employees exposed to potential falls from heights will be trained to minimize exposure. Fall protection equipment will be provided and its use required by all employees. The site Supervisor will be responsible for implementation of a fall protection plan for their job-site.

Hazard Identification

The Supervisor on each job-site will be responsible for identifying fall hazards on their job-site. The Supervisor will evaluate each situation or work procedure where employees may be exposed to a fall of 6 feet or more. The Supervisor will be responsible for developing a plan to eliminate the exposures, if possible, or to select the appropriate fall protection systems and/or equipment.

Hazard Control

Engineering Controls

- Personal Fall Protection
- Guardrail Systems
- Positioning Devices
- Warning Line Systems
- Floor Opening Covers

Administrative Controls

- Controlled access zones
- Employee training
- Audits
- Inspections
- Supervision
- Signs

Fall Protection Requirement

The following are examples of situations where fall protection would be needed. This listing is by no means complete, and there are many other situations where a fall of 6 feet or more is possible. It should be noted that ladders and scaffolding are not included in this list because they are covered by other OSHA standards and other requirements of our safety program.

Wall Openings

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 meters) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 meter) above the walking/working surface must 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 6 feet (1.8 meters) above lower levels.

Leading Edges

Each employee who is constructing a leading edge 6 feet (1.8 meters) 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 6 feet (1.8 meters) 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 6 feet (1.8 meters) or more above the excavation.

Formwork and Reinforcing Steel

While moving vertically and/or horizontally on the vertical face of rebar assemblies; built-in place fall protection is not required. 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 (7.3 meters). An employee must be provided with fall protection when climbing or otherwise moving at a height more than 24 feet (7.3 meters), the same as for fixed ladders.

Hoist Areas

Each employee in a hoist area shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems or personal fall arrest systems. If guardrail systems (or 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 6 feet (1.8 meters) 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.

Precast Concrete Erection and Residential Construction

Each employee who is 6 feet (1.8 meters) 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 6 feet (1.8 meters) or more by guardrail systems.

Low-slope Roofs

Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet (1.8 meters) 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 (15.24 meters) 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 6 feet (1.8 meters) 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. 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 (1.8 meters) intervals with high-visibility material
- Rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches (1 meter) from the walking/working surface and the highest point is not more than 45 inches (1.3 meters)--nor more than 50 inches (1.3 meters) when overhand bricklaying operations are being performed from the walking/working surface
- Strong enough to sustain stress of not less than 200 pounds (0.88 kilonewtons). 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 also must 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 (1.8 meters) nor more than 25 feet (7.6 meters) 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 (1.8 meters) nor more than 60 feet (18 meters) 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 (3 meters) nor more than 15 feet (4.6 meters) 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 6 feet or more, we will utilize one or more of the following means of providing protection:

Guardrail Systems

Guardrail systems must meet the following criteria. Toprails and midrails of guardrail systems must be at least one-quarter inch (0.6 centimeters) nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for toprails, it must be flagged at not more than 6 feet intervals (1.8 meters) with high-visibility material. Steel and plastic banding cannot 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 top rails or (equivalent) guardrails must be 42 inches (1.1 meters) plus or minus 3 inches (8 centimeters), 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 (53 centimeters) 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 (48 centimeters) 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 (48 centimeters).

The guardrail system must be capable of withstanding a force of at least 200 pounds (890 newtons) applied within 2 inches of the top edge in any outward or downward direction. When the 200 pound (890 newtons) test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches (1 meter) 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 (666 newtons) applied in any downward or outward direction at any point along the midrail or other member.

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

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

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

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

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

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

Personal Fall Arrest Systems

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

- Limit maximum arresting force on an employee to 900 pounds (4 kilonewtons) when used with a body belt.
- Limit maximum arresting force on an employee to 1,800 pounds (8 kilonewtons) when used with a body harness.
- Be rigged so that an employee can neither free fall more than 6 feet (1.8 meters) nor contact any lower level.
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters)
- Have sufficient strength to withstand twice the potential impact energy of an employee free fall a distance of 6 feet (1.8 meters) or the free fall distance permitted by the system, whichever is less.

The use of body belts for fall arrest is prohibited and a full body harness is required.

Personal fall arrest systems must be inspected prior to each use for wear damage, and other deterioration. Defective components must be removed from service.

Positioning Device Systems

Body harness systems are to be set up so that workers can free fall no farther than 2 feet (0.6 meters). 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 (13.3 kilonewtons), whichever is greater.

Safety Monitoring Systems

When alternative fall protection is not available, the employer shall implement a safety monitoring system. Employers must appoint a competent person to monitor the safety of workers and the employer shall ensure that the safety monitor is:

- Competent in the recognition of fall hazards.
- Capable of warning workers of fall hazard dangers and in detecting unsafe work practices.
- Operating on the same walking/working surfaces of the workers and can see them.
- 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 (1.8 meters) intervals with high-visibility material
- Rigged and supported so that the lowest point including sag) is no less than 34 inches (0.9 meters) from the walking/working surface and its highest point is no more than 39 inches (1 meter) 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 71 newtons) applied horizontally against the stanchion, 30 inches (0.8 meters) 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 (2.22 kilonewtons) 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 (1.8 meters) from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet (3 meters) 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 (1.8 meters) 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 being 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 (1.2 meters) 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 (1.8 meters) of a roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge must be stable and self-supporting.

Training

Employees will be trained in the following areas:

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

One Source Integration, Inc.

Trenching & Excavation

Purpose: This program outlines procedures and guidelines for the protection of employees working in and around excavations and trenches.

Scope: This program pertains to all company projects that require any excavations or trenches.

References: 29 CFR, Subpart P, §1926.650

Responsibilities

It is the responsibility of the Supervisor to implement and maintain the procedures and steps set forth in this program. Each employee involved with excavation and trenching work is responsible to comply with all applicable safety procedures and requirements of this program.

Definitions

Benching - A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels.

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

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

Duration of Exposure - The longer an excavation is open, the longer the other factors have to work on causing it to collapse.

Excavation - Any man-made cut, trench, or depression in an earth surface, formed by earth removal.

Hazardous Atmosphere - An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Protective System – Means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

Shield - A structure that is capable of withstanding the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. All shields must be in accordance with 29 CFR §1926.652(c)3 or (c)4.

Sloping - A method of protecting workers from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences such as soil type, length of exposure, and application of surcharge loads.

Surcharge Loads - Generated by the weight of anything in proximity to the excavation, push starts for a cave-in (anything up top pushing down).
Common surcharge loads:

- weight of spoil pile
- weight of nearby buildings, poles, pavement, or other structural objects
- weight of material and equipment

Trench - A narrow excavation below the surface of the ground, less than 15 feet wide, with a depth no greater than the width.

Undermining - Undermining can be caused by such things as leaking, leaching, caving or over-digging. Undermined walls can be very dangerous.

Vibration - A force that is present on construction sites and must be considered. The vibrations caused by backhoes, dump trucks, compactors and traffic on job sites can be substantial.

Hazards

One of the reasons the company requires a competent person on-site during excavation & trenching are the numerous potential hazardous that may be encountered or created. Hazards include:

- Electrocution
- Gas Explosion
- Entrapment
- Struck by equipment
- Suffocation

Hazard Controls

Before any work is performed and before any employees enter the excavation, a number of items must be checked and insured:

- Before any excavation, underground installations must be determined. This can be accomplished by either contacting the local utility companies or the local "one-call" center for the area. All underground utility locations must be documented on the proper forms. All overhead hazards (surface encumbrances) that create a hazard to employees must be removed or supported to eliminate the hazard.
- If the excavation is to be over 20 feet deep, it must be designed by a registered professional engineer who is registered in the state where work will be performed.
- Adequate protective systems will be utilized to protect employees. This can be accomplished through sloping, shoring, or shielding.
- The worksite must be analyzed in order to design adequate protection systems and prevent cave-ins. There must also be an excavation safety plan developed to protect employees.
- Workers must be supplied with and wear any personal protective equipment deemed necessary to assure their protection.
- All spoil piles will be stored a minimum of four (4) feet from the sides of the excavation. The spoil pile must not block the safe means of egress.
- If a trench or excavation is 4 feet or deeper, stairways, ramps, or ladders will be used as a safe means of access and egress. For trenches, the employee must not have to travel any more than 25 feet of lateral travel to reach the stairway, ramp, or ladder.

- No employee will work in an excavation where water is accumulating unless adequate measures are used to protect the employees.
- A competent person will inspect all excavations and trenches daily, prior to employee exposure or entry, and after any rainfall, soil change, or any other time needed during the shift. The competent person must take prompt measures to eliminate any and all hazards.
- Excavations and trenches 4 feet or deeper that have the potential for toxic substances or hazardous atmospheres will be tested at least daily. If the atmosphere is inadequate, protective systems will be utilized.
- If work is in or around traffic, employees must be supplied with and wear orange reflective vests. Signs and barricades must be utilized to ensure the safety of employees, vehicular traffic, and pedestrians.

Competent Person Responsibility

The OSHA Standards require that the competent person must be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authorization to take prompt corrective measures to eliminate them and, if necessary, to stop the work.

A competent person is required to:

- Have a complete understanding of the applicable safety standards and any other data provided.
- Assure the proper locations of underground installations or utilities, and that the proper utility companies have been contacted.
- Conduct soil classification tests and reclassify soil after any condition changes.
- Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
- Conduct all air monitoring for potential hazardous atmospheres.
- Conduct daily and periodic inspections of excavations and trenches.
- Approve design of structural ramps, if used.

Excavation Safety Plan

An excavation safety plan is required in written form. This plan is to be developed to the level necessary to insure complete compliance with the OSHA Excavation Safety Standard and state and local safety standards.

Excavation safety plan factors:

- Utilization of the local one-call system
- Determination of locations of all underground utilities
- Consideration of confined space atmosphere potential
- Proper soil protection systems and personal protective equipment and clothing
- Determination of soil composition and classification
- Determination of surface and subsurface water
- Depth of excavation and length of time it will remain open
- Proper adherence to all OSHA Standards, this excavation and trenching safety program, and any other coinciding safety programs.

Soil Classification and Identification

The OSHA Standards define soil classifications within the Simplified Soil Classification Systems, which consist of four categories: Stable rock, Type A, Type B, and Type C. Stability is greatest in stable rock and decreases through Type A and B to Type C, which is the least stable. Appendix A of the Standard provides soil mechanics terms and types of field tests used to determine soil classifications.

Stable rock is defined as natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Type A soil is defined as:

- Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (TSF) or greater.
- Cemented soils like caliche and hardpan are considered Type A.

Soil is NOT Type A if:

- It is fissured.

- The soil is subject to vibration from heavy traffic, pile driving or similar effects.
- The soil has been previously disturbed.
- The material is subject to other factors that would require it to be classified as a less stable material.
- The exclusions for Type A most generally eliminate it from most construction situations.

Type B soil is defined as:

- Cohesive soil with an unconfined compressive strength greater than .5 TSF, but less than 1.5 TSF.
- Granular non-cohesive soil including angular gravel, silt, silt loam, and sandy loam.
- The soil has been previously disturbed except that soil classified as Type C soil.
- Soil that meets the unconfined compressive strength requirements of Type A soil, but is fissured or subject to vibration.
- Dry rock that is unstable.

Type C soil is defined as:

- Cohesive soil with an unconfined compressive strength of .5 TSF or less.
- Granular soils including gravel, sand and loamy sand.
- Submerged soil or soil from which water is freely seeping.
- Submerged rock that is not stable.

Soil Test & Identification

The competent person will classify the soil type in accordance with the definitions in Appendix A of the Standard on the basis of at least one visual and one manual analysis. These tests should be run on freshly excavated samples from the excavation and are designed to determine stability based on a number of criteria: cohesiveness, presence of fissures, presence and amount of water, unconfined compressive strength, duration of exposure, undermining, presence of layering, and prior excavation and vibration.

The cohesion tests are based on methods to determine the presence of clay. Clay, silt, and sand are size classifications, with clay being the smallest sized particles, silt intermediate and sand the largest. Clay minerals exhibit good cohesion and plasticity (can be molded). Sand exhibits no elasticity and virtually no cohesion unless surface wetting is present. The degree of cohesiveness and plasticity depend on the amounts of all three types and water.

When examining the soil, three questions must be asked:

- Is the sample granular or cohesive?
- Fissured or non-fissured?
- What is the unconfined compressive strength measured in TSF?

Methods of testing soils:

- Visual test: If the excavated soil is in clumps, it is cohesive. If it breaks up easily, not staying in clumps, it is granular.
- Wet manual test: Wet your fingers and work the soil between them. Clay is a slick paste when wet, meaning it is cohesive. If the clump falls apart in grains, it is granular.
- Dry strength test: Try to crumble the sample in your hands with your fingers. If it crumbles into grains, it is granular. Clay will not crumble into grains, only into smaller chunks.
- Pocket penetrometer test: This instrument is most accurate when soil is nearly saturated. This instrument will give unconfined compressive strength in tons per square foot. The spring-operated device uses a piston that is pushed into a coil up to a calibration groove. An indicator sleeve marks and retains the reading until it is read. The reading is calibrated in tons per square foot (TSF) or kilograms per cubic centimeter.
- Thumb penetration test: The competent person attempts to penetrate a fresh sample with thumb pressure. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded.
- Shearvane: Measures the approximate shear strength of saturated cohesive soils. The blades of the vane are pressed into a flat section of undisturbed soil, and the knob is turned slowly until soil failure. The dial is read directly when using the standard vane. The results will be in tons per square foot or kilograms per cubic centimeter.

The competent person will perform several tests of the excavation to obtain consistent, supporting data along its depth and length. The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The competent person must also determine the level of protection based on what conditions exist at the time of the test, and allow for changing conditions.

Excavation Protection Systems

The three basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.

The protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to or transmitted to the system. Every employee in an excavation shall be protected from cave-ins by an adequate protective system, unless:

- Exceptions to using protective system.
- Excavations are made entirely in stable rock.
- Excavations are less than 5 feet deep and declared safe by a competent person.

Sloping and Benching Systems

There are four options for sloping:

- Slope to the angle required by the Standard for Type C, which is the most unstable soil type.
- The table provided in Appendix B of the Standard may be used to determine the maximum allowable angle (after determining the soil type).
- Tabulated data prepared by a registered professional engineer can be utilized.
- A registered professional engineer can design a sloping plan for a specific job.

Sloping and benching systems for excavations five (5) to twenty (20) feet in depth must be constructed under the instruction of a designated competent person.

Sloping and benching systems for excavations greater than twenty (20) feet must be designed and stamped by a registered professional engineer.

Sloping and benching specifications can be found in Appendix B of the OSHA Standard (Subpart P).

Shoring Systems

Shoring is another protective system or support system. Shoring utilizes a framework of vertical members (uprights), horizontal members (whales), and cross braces to support the sides of the excavation to prevent a cave-in. Metal hydraulic, mechanical or timber shoring are common examples.

The different examples of shoring are found in the OSHA Standard under these appendices:

APPENDIX C - Timber Shoring for Trenches

APPENDIX D - Aluminum Hydraulic Shoring for Trenches

APPENDIX E - Alternatives to Timber Shoring

Shield Systems (Trench Boxes)

Shielding is the third method of providing a safe workplace. Unlike sloping and shoring, shielding does not prevent a cave-in. Shields are designed to withstand the soil forces caused by a cave-in and protect the employees inside the structure. Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces.

Shielding design and construction is not covered in the OSHA Standards. Shields must be certified in design by a registered professional engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the job-site office. **ANY REPAIRS OR MODIFICATIONS MUST BE APPROVED BY THE MANUFACTURER.**

Safety Precautions for Shield Systems

- Shields must not have any lateral movement when installed.
- Employees will be protected from cave-ins when entering and exiting the shield (examples - ladder within the shield or a properly sloped ramp at the end).
- Employees are not allowed in the shield during installation, removal, or during any vertical movement.
- Shields can be 2 ft. above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.

- The shield must extend at least 18 inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).
- The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

Personal Protective Equipment

It is company policy to wear a hard hat, safety glasses, and work boots on the job-site. Because of the hazards involved with excavations, other personal protective equipment may be necessary, depending on the potential hazards present (examples -goggles, gloves, and respiratory equipment).

Inspections

Daily inspection of excavations, the adjacent areas and protective systems shall be made by the competent person for evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.

- All inspections shall be conducted by the competent person prior to the start of work and as needed throughout the shift.
- Inspections will be made after every rainstorm or any other increasing hazard.
- All documented inspections will be kept on file at the job-site.
- A copy of the Daily Excavation Inspection form is located at the end of this program.

Training

The competent person(s) must be trained in accordance with the OSHA Excavation Standard, and all other programs that may apply (examples Hazard Communication, Confined Space, and Respiratory Protection), and must demonstrate a thorough understanding and knowledge of the programs and the hazards associated.

All other employees working in and around the excavation must be trained in the recognition of hazards associated with trenching and excavating.

One Source Integration, Inc.

Crane & Hoist Safety

Purpose: Many types of cranes, hoists, and rigging devices are used at OSI, Inc. for lifting and moving materials. OSI, Inc.'s policy is to maintain a safe workplace for its employees; therefore, it cannot be overemphasized that only qualified and licensed individuals shall operate these devices. The safety rules and guidance in this chapter apply to all operations at OSI, Inc. that involve the use of cranes and hoists installed in or attached to buildings and to all OSI, Inc. employees, supplemental labor, and subcontractor personnel who use such devices.

Scope: This policy applies to all OSI, Inc. employees and contractors working under the direct supervision of OSI, Inc.

References:

ASME/ANSI B30.2, "Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)."

ASME/ANSI B30.9, "Slings."

ASME/ANSI B30.10, "Hooks."

ASME/ANSI B30.11, "Monorails and Underhung Cranes."

ASME/ANSI B30.16, "Overhead Hoists (Underhung)."

ASME/ANSI B30.17, "Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)."

ASME/ANSI B30.20, "Below-the-Hook Lifting Devices."

ASME/ANSI B30.21, "Manually Lever Operated Hoists."

Code of Federal Regulation, Title 29, Part 1910.179, "Overhead and Gantry Cranes."

Code of Federal Regulation, Title 29, Part 1910.184, "Slings."

Code of Federal Regulation, Title 29, Part 1926.550, "Cranes and Derricks."

Mechanical Engineering Department *Design Safety Standards*, Chapter 2.2, "Lifting equipment."

CMAA Specification No. 70, *Specifications for Electric Overhead Traveling Cranes*.

CMAA Specification No. 74, *Specifications for Top-Running and Under-Running Single-Girder Electric Overhead Traveling Cranes Utilizing Under Running Trolley Hoist*.

NFPA 70, Article 610, *Cranes and Hoists*.

Responsibilities

Supervisors are responsible for:

- Ensuring that employees under their supervision receive the required training and are certified and licensed to operate the cranes and hoists in their areas.
- Providing training for prospective crane and hoist operators. This training must be conducted by a qualified, designated instructor who is a licensed crane and hoist operator and a full-time OSI, Inc. employee.
- Evaluating crane and hoist trainees using the Crane Safety Checklist and submitting the Qualification Request Form to the Safety Office to obtain the operator's license.
- Ensuring that hoisting equipment is inspected and tested monthly by a responsible individual and that rigging equipment is inspected annually.

Crane and Hoist Operators are responsible for:

- Operating hoisting equipment safely.
- Conducting functional tests prior to using the equipment.
- Selecting and using rigging equipment appropriately.
- Having a valid operator's license on their person while operating cranes or hoists.
- Participating in the medical certification program, as required.

Engineering/Maintenance/Operations Department is responsible for:

- Performing annual maintenance and inspection of all OSI, Inc. cranes and hoists that are not covered by a program with maintenance responsibility.
- Conducting periodic and special load tests of cranes and hoists.
- Maintaining written records of inspections and tests, and providing copies of all inspections and test results to facility managers and building coordinators who have cranes and hoists on file.
- Inspecting and load testing cranes and hoists following modification or extensive repairs (e.g., a replaced cable or hook, or structural modification.)
- Scheduling a non-destructive test and inspection for crane and hoist hooks at the time of the periodic load test, and testing and inspecting before use new replacement hooks and other hooks suspected of having been overloaded. The evaluation, inspection, and testing may include, but are not limited to visual, dye penetrant, and magnetic particle techniques referenced in ASME B30.10 (Hooks, Inspection and Testing.)
- Maintaining all manuals for cranes and hoists in a central file for reference.

Safety Department is responsible for

- Conducting training for all Crane & Hoist Operators
- Issuing licenses to Crane and Hoist Operators
- Periodically verifying monthly test and inspection reports.
- Interpreting crane and hoist safety rules and standards.

Safe Operating Requirements

All workers who use any OSI, Inc. crane or hoist shall have an operator's license. The company issues licenses for authorized employees who have been specifically trained in crane and hoist operations and equipment safety.

Crane and Hoist Operators

To be qualified as a Crane and Hoist Operator, the candidate shall have received hands-on training from a licensed, qualified crane and hoist operator designated by the candidate's supervisor. Upon successful completion of training, the licensed crane and hoist operator and the candidate's supervisor will fill out and sign the Qualification Request

Form and Crane Safety Checklist and send them to the Safety Office for approval. The candidate will be issued a license upon approval by the Safety Manager. Crane and Hoist Operators must renew their license every three years by satisfying the requirements described above.

Crane and Hoist Safety Design Requirements

Following are the design requirements for cranes and hoists and their components:

- The design of all commercial cranes and hoists shall comply with the requirements of ASME/ANSI B30 standards and Crane Manufacturer's Association of America standards (CMAA-70 and CMAA-74). Varney, Inc.-fabricated lifting equipment shall comply with the requirements in Chapter 2.2 (Lifting Equipment) of Mechanical Engineering *Design Safety Standards* (latest edition).
- All crane and hoist hooks shall have safety latches.
- Hooks shall not be painted (or re-painted) if the paint previously applied by the manufacturer is worn.
- Crane pendants shall have an electrical disconnect switch or button to open the main-line control circuit.
- Cranes and hoists shall have a main electrical disconnect switch. This switch shall be in a separate box that is labeled with lockout capability.
- Crane bridges and hoist monorails shall be labeled on both sides with the maximum capacity.
- Each hoist-hook block shall be labeled with the maximum hook capacity.
- Directional signs indicating N-W-S-E shall be displayed on the bridge underside, and a corresponding directional label shall be placed on the pendant.
- A device such as an upper-limit switch or slip clutch shall be installed on all building cranes and hoists. A lower-limit switch may be required when there is insufficient hoist rope on the drum to reach the lowest point.
- All cab and remotely operated bridge cranes shall have a motion alarm to signal bridge movement.
- All newly installed cranes and hoists, or those that have been extensively repaired or rebuilt structurally, shall be load tested at 125% capacity prior to being placed into service.

- If an overload device is installed, a load test to the adjusted setting is required.
- Personnel baskets and platforms suspended from any crane shall be designed in accordance with the specifications in 29 CFR 1926.550(g).

General Safety Rules

Operators shall comply with the following rules while operating the cranes and hoists:

- 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. Also, 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 or use a dynamometer or load cell to determine the weight.
- 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.

Operation Rules

Pre-operational Test

At the start of each work shift, operators shall do the following steps before making lifts with any crane or hoist:

1. Test the upper-limit switch. Slowly raise the unloaded hook block until the limit switch trips.
2. 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.
3. If provided, test the lower-limit switch.
4. Test all direction and speed controls for both bridge and trolley travel.
5. Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches.
6. Test the pendant emergency stop.
7. Test the hoist brake to verify there is no drift without a load.
8. If provided, test the bridge movement alarm.
9. Lock out and tag for repair any crane or hoist that fails any of the above tests.

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.

- *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.
- Raise the hook at least 2.1 m (7-ft) above the floor.
- Store the pendant away from aisles and work areas, or raise it at least 2.1 m (7 ft) above the floor.
- Place the emergency stop switch (or push button) in the OFF position.

Rigging

General Rigging 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.

OSI, Inc. policy requires a minimum safety factor of 5 to be maintained for wire rope slings. The following types of slings shall be rejected or destroyed:

- Nylon slings with
 - Abnormal wear.
 - Torn stitching.
 - Broken or cut fibers.
 - Discoloration or deterioration.
- Wire-rope slings 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 10deg. 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

Do the following when 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.
- Make sure that shackle pins and shouldered eyebolts are installed in accordance with the manufacturer's recommendations.
- Make sure 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.

Crane Overloading

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. Additionally, overloaded cranes shall be inspected, repaired, load tested, and approved for use before being returned to service.

Working at Heights on Cranes or Hoists

Anyone conducting maintenance or repair on cranes or hoists at heights greater than 1.8 m (6 ft) shall use fall protection. Fall protection should also be considered for heights less than 1.8 m. Fall protection includes safety harnesses that are fitted with a lifeline and securely attached to a structural member of the crane or building or properly secured safety nets.

Use of a crane as a work platform should only be considered when conventional means of reaching an elevated worksite are hazardous or not possible. Workers shall not ride a moving bridge crane without an approval from the Safety Office, which shall specify the following as a minimum:

- Personnel shall not board any bridge crane unless the main disconnect switch is locked and tagged open.
- Personnel shall not use bridge cranes without a permanent platform (catwalk) as work platforms. Bridge catwalks shall have a permanent ladder access.
- Personnel shall ride seated on the floor of a permanent platform with approved safety handrails, wear safety harnesses attached to designated anchors, and be in clear view of the crane operator at all times.
- Operators shall lock and tag open the main (or power) disconnect switch on the bridge catwalk when the crane is parked.

Hand Signals

Signals to the operator shall be in accordance with the standard hand signals unless voice communications equipment (telephone, radio, or equivalent) is used. 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.

Inspection, Maintenance, and Testing

All tests and inspections shall be conducted in accordance with the manufacturers recommendations.

Monthly Tests and Inspections

- All in-service cranes and hoists shall be inspected monthly and the results documented on Form _____
- Defective cranes and hoists shall be locked and tagged "out of service" until all defects are corrected. The inspector shall initiate corrective action by notifying the facility manager or building coordinator.

Annual Inspections

The [] Department shall schedule and supervise (or perform) annual preventive maintenance (PM) and annual inspections of all cranes and hoists. The annual PM and inspection shall cover

- Hoisting and lowering mechanisms.
- Trolley travel or monorail travel.
- Bridge travel.
- Limit switches and locking and safety devices.
- Structural members.
- Bolts or rivets.
- Sheaves and drums.
- Parts such as pins, bearings, shafts, gears, rollers, locking devices, and clamping devices.
- Brake system parts, linings, pawls, and ratchets.
- Load, wind, and other indicators over their full range.
- Gasoline, diesel, electric, or other power plants.
- Chain-drive sprockets.

- Crane and hoist hooks.
- Electrical apparatus such as controller contractors, limit switches, and push button stations.
- Wire rope.
- Hoist chains.

Load Testing

- Newly installed cranes and hoists shall be load tested at 125% of the rated capacity by designated personnel.
- Slings shall have appropriate test data when purchased. It is the responsibility of the purchaser to ensure that the appropriate test data are obtained and maintained.
- Re-rated cranes and hoists shall be load tested to 125% of the new capacity if the new rating is greater than the previous rated capacity.
- Fixed cranes or hoists that have had major modifications or repair shall be load tested to 125% of the rated capacity.
- Cranes and hoists that have been overloaded shall be inspected prior to being returned to service.
- Personnel platforms, baskets, and rigging suspended from a crane or hoist hook shall be load tested initially, then re-tested annually thereafter or at each new job site.
- All cranes and hoists with a capacity greater than 2722 kg (3 tons) should be load tested every four years to 125% of the rated capacity. Cranes and hoists with a lesser capacity should be load tested every eight years to 125% of the rated capacity.
- All mobile hoists shall be load tested at intervals to be determined by management.

Records

Each department shall maintain records for all cranes, hoist and rigging equipment.

One Source Integration, Inc.

Welding, Cutting & Brazing

- Purpose:** Welding, Cutting & Brazing operations are, by their nature, very hazardous. This process uses flammable/explosive/oxidizing gases at high pressures and high temperatures. Sometimes welders are welding, cutting and/or brazing metals whose molten fumes are toxic to the human body. It is our policy to minimize these hazards by the selection of authorized and trained personnel and use of strict operational guidelines and procedures.
- Scope:** This program covers all authorized personnel who are required to set-up, handle and/or use welding, cutting and/or brazing equipment.
- Reference:** OSHA Welding, Cutting and Brazing Standard 29 CFR 1910, Subpart Q, §1910.252-.25, OSHA Hazardous Communication Standard 29 CFR 1910, Subpart Z, §1910.1200 OSHA Confined Space Standard 29 CFR 1910, Subpart J §1910.146

Responsibility and Authority

The Supervisor is designated for and qualified as the administrator of the Welding, Cutting, and Brazing Program and will provide management of the work area conditions and evaluate the continued effectiveness of the program.

It is the responsibility of each employee to adhere to these policies and procedures.

The written Welding, Cutting, and Brazing Program will be available for review or inspection by employees.

Policy and Procedure

Exclusions: This program does not pertain to the following:

- Guidelines for the design or manufacture of equipment
- Building piping systems
- Pipeline protection systems and station outlet equipment
- Bulk gas supply systems
- Building electrical installations

OSI, Inc. requires that only authorized and trained personnel be permitted to use and handle welding, cutting and/or brazing equipment. All operators must have a copy of the appropriate operating instructions and procedures, and are directed to follow them.

- All pressurized gas cylinders must be handled with care and stored safely at all times. All cylinders must be kept clear of sources of excess heat. Oxygen must be stored separately from other gases. At all times, the valves and meters must be protected and kept in proper working order. There is no such thing as an empty cylinder and all cylinders must be treated as if they are full at all times. There is not difference between full and empty cylinders in storage and handling procedures.
- A gas cylinder that catches fire or is punctured can act like a torpedo, injuring everyone and damaging everything in its path.

Welding uses heat generated by burning gases or electricity to melt fuse metals. The process is made easier by the use of other materials such as fluxes. The process may use other materials know to cause harm to human beings if inhaled. Take all sensible precautions to prevent the ingestion of these other toxic materials. Be especially aware of the possibility of toxic fume accumulations when welding in shielded or enclosed areas.

(General Practice) Personal Protective Equipment

- Protective eye-wear must be worn at all times when welding – goggles, helmet or glasses. Sunglasses are not permitted at any time.
- All exposed skin must be covered to prevent burns (leather or wool are best for coverings). Never wear polyester (it's flammable).
- Clothing must be free of all flammable substances, especially solvents, grease, fuels, etc.
- Clothing with cuffs will not be worn. All pockets must be covered and loosed. Wear flameproof gloves or gauntlets.
- Wear high-top leather shoes or boots that are fully laced and strongly made.
- In closed atmospheric conditions wear respirators rated for the hazards present, if permissible exposure limits are expected to be exceeded.

(General Practice) Welding and Burning

- All combustible material must be cleared for at least 25 feet from the area around your work. This includes wood-shavings, paper, grass, twigs, etc.
- If combustibles cannot be moved, they must be covered with flame-retardant material.
- Cover any cracks in floors or walls to prevent sparks or slag from getting into them.

- If combustible material is stored on the opposite side of a metal wall, move the material away from the wall. If the material cannot be moved, set a “fire-watch”.
- Shut down building ventilation systems or close ducts if sparks or slag can get into them.
- When welding in open air, shield the work from the wind to prevent sparks blowing downwind.
- When cutting or welding closer than 25 feet to combustible materials that can't be moved or protected, set a “fire-watch” during work and for ½ hour following the work. Fire-watcher must have appropriate fire extinguisher on hand.

Burning and Gas Welding – Oxygen/Fuel Gas Apparatus

- There is no such thing as an empty cylinder. All gas cylinders are to be stored and handled as if full.
- Cylinders must not be opened more than 25% or ¼ turn.
- All cylinders will be stored in well-ventilated areas, in a vertical position, with a chain or other restraint holding them in place.
- Do not accept delivery of cylinders from supplier unless valves are capped.
- Do not accept delivery of cylinders unless MSDS is on file. In the case of a gas not previously in use on this site, a completed material approval with MSDS attached must be submitted.
- Only use cylinders supplied and maintained by approved vendors.
- Cylinder caps should be kept in place except when cylinder is in use. Caps should be replaced when cylinder is not in use. “In use” means the cylinder is in the welding rig or cradle, secured in a vertical position.
- Store gas cylinders at least 20 feet from sources of heat, flame or fire.
- Do not allow the temperature of enclosed storage areas to exceed 125° F.
- Store oxygen cylinders at least 20 feet from fuel gasses or separate them with a wall at least 5 feet high having a 1-hour fire rating.
- Do not store cylinders near elevators, shafts, gangways or stairways.
- Do not store oxygen with other combustible materials including petroleum-based products of any type, carbides, etc.
- **Contact between oxygen and any petroleum-based product can result in fire/explosion. It does not require heat!**
- Make sure the contents are clearly marked on all cylinders.
- Never drop, roll, skid, or puncture a gas cylinder.
- Do not raise cylinders to upper levels with chain or rope slings. Use cradles only.
- Never force connections that do not fit.
- Inspect the entire welding rig before use each day.

- Shield other workers and the public from welding light, flashes, sparks, slag, and molten metal.
- Ventilate welding operations to protect welders, helpers and others from airborne contaminants created by the welding process.
- Light torches with strike or friction lighters, only. Never use matches, hot metal or cigarette lighters.
- Purge or bleed each hose, individually, before lighting the torch for the first time each day.
- Do not use overly worn or patched hoses.
- Wear the appropriate shade welding hood or cutting goggles and a face-shield during all welding/burning operations.

Burning and Gas Welding – Regulators and Gauges

- To maintain an even flow of gas to the torch, Regulators or reducing valves must be installed on all compressed gas cylinders.
- Use only regulators listed as registered with **UNDERWRITERS LABORATORIES (UL) OR FACTORY MUTUAL LABORATORIES.**
- Flashback arresters should be installed on all regulators.
- Make sure gauges are correct for the gas contained in the cylinder (i. e. do not use acetylene gauge on oxygen cylinder.)
- Never convert fuel regulator for use on oxygen cylinder or vice versa.
- Never use an oxygen hose on a fuel cylinder or vice versa.
- Use only correct wrenches for attaching regulators to cylinders.
- If a regulator is equipped with a hand-wheel, never attempt to turn it with a hammer or by hitting it with a wrench.
- Do not repair regulator, unless fully qualified and certified.
- Do not repair regulator, unless fully qualified and certified.
- Watch the indicator on the regulator after closing torch valves. If needle creeps upward replace the regulator, immediately.
- Leave valve wrenches connected to valve while in use.
- Cylinder valves are to be opened only when actively in use.
- Do not force cylinder valves open or closed.

Burning and Gas Welding – Acetylene

- Creates flame of about 6,000°F when burned with oxygen.
- Ignites easily when mixed with oxygen or air.
- Is supplied in gas cylinders.
- Never allow acetylene cylinders to lie on their sides. This creates corrosion of internal valve parts.

- Never allow acetylene regulator to discharge gas flow greater than 15 psi (pounds per square inch).

Burning and Gas Welding – Oxygen

- Never use oil or grease to lubricate oxygen cylinder fittings or valves.
- Never use oxygen cylinder fittings or valves for other gas cylinders.
- Oxygen regulators should be equipped with a safety release valve to prevent flying parts if diaphragm ruptures.
- Never use oxygen to operate pneumatic tools, to blow out lines, or clean dust off clothing.

Burning and Gas Welding – Connections and Hoses

- Replace leaking, broken, torn, burned, and worn-out hoses. If only damaged in one spot, cut out the damage and splice the hose together.
- Never repair bad spots in hoses with tape.
- **Never test for leaks by lighting a flame!**
- Use approved bronze or brass fittings, only.
- Never use any petroleum-based product, such as white lead, grease, pipe-compound, etc. to make connections.
- Attach flashback arresters at either end or both ends of the hose, depending on the type of arrester used.
- Use the proper type and size of hose for the job.
- Use the correct color coding for hoses: (Use only approved siamese hoses – never use individual hoses.)
 1. Green for oxygen
 2. Red for acetylene
- Place hoses where other workers, tools, machines, or vehicles will not damage them.

Electric Arc Welding

- Inspect both the ground cable and work cable for damage, daily.
- Inspect electrode holders for loose or damaged connections.
- You may splice a lead to repair it. Never use tape.
- Never splice weld-lead within 10 feet of holder – replace the lead.
- Never coil the electrode cable around your body.
- Always review the composition of fluxes, welding rods and coatings.
- Protect yourself from exposure to toxic substances.
- Ground both the frames of the welder and the metal you are welding.

- Do not attach the ground to pipes carrying gas or flammable liquids or to electrical conduits. Ground should be as close to the machine as possible.
- Do not weld in wet conditions unless you take proper precautions.
- Do not allow metal parts in contact with the electrode to touch your skin, damp clothing, or wet clothing. Make sure your work gloves are dry at all times.
- Disconnect the welder from the power source when changing the electrode holder.

Training:

Training will be provided in the Welding, Cutting & Brazing Program to employees, depending on their level of involvement in the procedures.

- Authorized employees will be thoroughly trained in the following:
 1. An overview of the requirements of the Welding, Cutting & Brazing Program and the general requirements of the federal standard §1910.252-.254.
 2. Recognition of applicable hazards.
 3. The methods and means necessary for effective isolation and control for all Welding, Cutting & Brazing situations present at OSI, Inc. facilities.
 4. Location and availability of the written program and a review of specific Welding, Cutting & Brazing hazards in the workplace.
- Affected employees will be trained in the purpose and use of the Welding, Cutting & Brazing procedures.
- All other employees whose work operations are or may be in an area where Welding, Cutting and/or Brazing control procedures may be necessary will be instructed regarding the procedures and the prohibitions concerning the operations.
- Refresher training will be provided annually as required by 29 CFR §1910.251.
- Additional training will be provided to employees:
 1. Upon the introduction of any new or different Welding, Cutting and/or Brazing hazard into the workplace;

2. When new types of equipment are to be used;
3. When new types of metals are to be used, or
4. When inadequacy in the program or employee use show there is need.
5. All training will be documented to reflect subject matter, the employee trained, employee signature and date of training.

One Source Integration, Inc.

Powered Industrial Trucks

- Purpose:** During the movement of products and materials there are numerous opportunities for personal injury and property damage if proper procedures and caution are not used. The information in this section shall be used to train prospective industrial truck operators and provide the basis for refresher and annual retraining.
- Scope:** This policy applies to all OSI, Inc. employees and contractors working under the direct supervision of OSI, Inc.
- Reference:** OSHA standard 29 CFR, Subpart N, §1910.178

Responsibilities

Management

- Provide adequate training in safe operation of all equipment used to move or access materials
- Provide equipment that is safe to operate
- Implement an "Out of Service" program for damaged equipment
- Not allow modification to equipment except those authorized in writing by the equipment manufacturer
- Establish safe operating rules and procedures

Supervisors

- Monitor safe operations of material handling equipment
- Ensure all equipment is safety checked daily
- Tag "Out of Service" any damaged equipment

Employees

- Operate only that equipment for which they have been specifically trained and authorized
- Conduct required daily pre-use inspections

- Report any equipment damage or missing safety gear
- Follow all safety rules and operating procedures

Hazards

- Falling loads
- Overloading of equipment
- Impact with equipment
- Piercing of containers
- Loading dock roll off
- Chemical contact - battery acid
- Fires during refueling

Hazard Controls

- Control of equipment keys
- Authorized fueling & recharge areas
- Proper palletizing of material
- Marked travel lanes
- Equipment warning lights
- Seat belts
- Mounted fire extinguishers

Pre-Qualification

All candidates for Powered Industrial Truck (PIT) operators must meet the following basic requirements prior to starting initial or annual refresher training:

- Must have no adverse vision problems that cannot be corrected by glasses or contacts
- No adverse hearing loss that cannot be corrected with hearing aids
- No physical impairments that would impair safe operation of the PIT
- No neurological disorders that affect balance or consciousness

- Not taking any medication that affects perception, vision, or physical abilities

Training

Training for Powered Industrial Truck (PIT) Operators shall be conducted by an experienced operator, selected by Management. All operational training shall be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a Powered Industrial Truck (forklift, etc) without continual & close supervision. Training consists of:

Trainees may operate a powered industrial truck only:

- Under the direct supervision of persons, selected by management, who have the knowledge, training, and experience to train operators and evaluate their competence; and
- Where such operation does not endanger the trainee or other employees.

Training Content

Training consists of a combination of formal instruction, practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

Initial Training: Powered industrial truck operators shall receive initial training in the following topics:

Truck-related training topics:

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate
2. Differences between the truck and the automobile
3. Truck controls and instrumentation: where they are located, what they do, and how they work
4. Engine or motor operation
5. Steering and maneuvering
6. Visibility (including restrictions due to loading)
7. Fork and attachment adaptation, operation, and use limitations
8. Vehicle capacity
9. Vehicle stability

10. Any vehicle inspection and maintenance that the operator will be required to perform
11. Refueling and/or charging and recharging of batteries
12. Operating limitations
13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace-related topics:

1. Surface conditions where the vehicle will be operated
2. Composition of loads to be carried and load stability
3. Load manipulation, stacking, and unstacking
4. Pedestrian traffic in areas where the vehicle will be operated
5. Narrow aisles and other restricted places where the vehicle will be operated
6. Hazardous (classified) locations where the vehicle will be operated
7. Ramps and other sloped surfaces that could affect the vehicle's stability
8. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
9. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation

Refresher training and evaluation:

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

1. The operator has been observed to operate the vehicle in an unsafe manner
2. The operator has been involved in an accident or near-miss incident
3. The operator has received an evaluation that reveals that the operator is not operating the truck safely
4. The operator is assigned to drive a different type of truck
5. A condition in the workplace changes in a manner that could affect safe operation of the truck

6. Once every 3 years an evaluation will be conducted of each powered industrial truck operator's performance.

Safe Operating Procedures (SOP) & Rules

- Only authorized and trained personnel will operate PITs.
- All PITs will be equipped with a headache rack, fire extinguisher, rotating beacon, back-up alarm and seat belts. Seat belts will be worn at all times by the Operator.
- The operator will perform daily pre- and post-trip inspections.
- Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) will be reported for immediate repair or have the PIT taken "Out of Service".
- Operators will follow the proper recharging or refueling safety procedures.
- Loads will be tilted back and carried no more than 6 inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- PITs will travel no faster than 5 mph or faster than a normal walk.
- Hard hats will be worn by PIT Operators in high lift areas. .
- Operator will sound horn and use extreme caution when meeting pedestrians, making turns and cornering.
- Passengers may not ride on any portion of a PIT. Only the operator will ride PITs. "NO PASSENGERS" decals will be affixed on all PITs.
- If PITs are used as a man lift, an appropriate man lift platform (cage with standard rails and toe-boards) will be used.
- Aisle will be maintained free from obstructions, marked and wide enough (six foot minimum) for vehicle operation.
- Lift capacity will be marked on all PITs. Operator will assure load does not exceed rated weight limits.
- When un-attended, PITs will be turned off, forks lowered to the ground and parking brake applied.
- All PITs (with exception of pallet jacks) will be equipped with a multi-purpose dry chemical fire extinguisher. (Minimum rating; 2A:10B:C)

- Operators are instructed to report all accidents, regardless of fault and severity, to Management. Management will conduct an accident investigation.
- When loading rail cars and trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store on edge when not in use.
- Rail cars and trailers will be parked squarely to the loading area and have wheels chocked in place. Operators will follow established Docking/Un-Docking Procedures.

Changing and Charging Storage Batteries

- Battery charging installations shall be located in areas designated for that purpose.
- Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.
- A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.
- Reinstalled batteries shall be properly positioned and secured in the truck.
- A carboy tilter or siphon shall be provided for handling electrolyte.
- When charging batteries, acid shall be poured into water; water shall not be poured into acid.
- Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.
- Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.
- Smoking is prohibited in the charging area.
- Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

Trucks

- The flooring of trucks and trailers shall be checked for breaks and weakness before they are driven onto.

- The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.
- Fixed jacks may be necessary to support a semi trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.

Operations

- If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.
- Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- Arms or Legs shall not be placed between the uprights of the mast or outside the running lines of the truck.
- When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.
- There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
- A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- Trucks shall not be parked so as to block fire aisles, access to stairways, or fire equipment.

Traveling

- All traffic regulations shall be observed, including authorized speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.
- The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.
- The driver shall be required to look in the direction of, and keep a clear view of the path of travel.
- Grades shall be ascended or descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade. On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.
- Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Stunt driving and horseplay shall not be permitted.
- The driver shall be required to slow down for wet and slippery floors.
- Dockboard or bridge plates, shall be properly secured before they are driven over. Dockboard or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded.
- Running over loose objects on the roadway surface shall be avoided.
- While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

Loading

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
- Only loads within the rated capacity of the truck shall be handled.

- The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.
- Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

Fueling Safety

- Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.
- Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No truck shall be operated with a leak in the fuel system until the leak has been corrected.
- Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

Maintenance of Powered Industrial Trucks

- Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.
- Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.
- Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.
- All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional

counter-weighting of fork trucks shall not be done unless approved by the truck manufacturer.

- Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined prior to use each shift. Defects when found shall be immediately reported and corrected.
- When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.
- Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 deg. F.) solvents shall not be used. High flash point (at or above 100 deg. F.) solvents may be used.

Safe Operation Procedure for Charging LPG Tank

1. No Smoking.
2. Move LPG PIT outside for refueling.
3. Turn off PIT.
4. LPG tanks will be removed in the following order:
 - shut off service valve
 - disconnect tank from hose
 - unbuckle and remove tank from bracket
5. LPG tanks will be replaced in to following order:
 - place tank in bracket and re-buckle
 - reconnect hose to tank and tighten firmly
 - open valve slowly and assure proper seal

NOTE: Federal Law Prohibits dispensing an improper fuel type into any Vehicle or into a non-approved fuel container.

In Case of LPG Leaks or Tank Rupture

1. DO NOT start or move the PIT.
2. If fuel hose is leaking, Close valve immediately and place PIT "Out of Service" until repaired.
3. If tank ruptures, warn other, immediately leave the area (at least 50 feet) and notify Management. Do not re-enter the area until cleared by Management.

Powered Industrial Truck Pre-Use Checklist

A check of the following items (as applicable) is to be conducted by the operator prior to use each shift.

Lights

Horn

Brakes

Leaks

Warning Beacon

Backup Warning Alarm

Fire Extinguisher

If any deficiencies are noted, the unit is to be placed OUT OF SERVICE until the problem has been corrected. Additionally, it is the operator's responsibility to notify the immediate supervisor and fill out a maintenance request.

One Source Integration, Inc.

Fire Prevention Program

Purpose

OSI, Inc. has been developed to work in conjunction with company emergency plans and other safety 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 reduce the incidence of fires by eliminating opportunities for ignition of flammable materials.

Responsibilities

Management

- Ensure all fire prevention methods are established and enforced
- Ensure fire suppression systems such as sprinklers and extinguishers are periodically inspected and maintained to a high degree of working order
- Train supervisors to use fire extinguishers for incipient fires
- Train employees on evacuation routes and procedures

Supervisors

- Closely monitor the use of flammable materials and liquids
- Train assigned employees in the safe storage, use and handling of flammable materials
- Ensure flammable material storage areas are properly maintained

Employees

- Use, store and transfer flammable materials in accordance with provided training
- Do not mix flammable materials
- Immediately report violations of the Fire Safety Program

Hazards

Fire and explosion hazards can exist in almost any work area. Potential hazards include:

- Improper operation or maintenance of gas fired equipment
- Improper storage or use of flammable liquids
- Smoking in prohibited areas
- Accumulation of trash
- Unauthorized Hot Work operations

Hazard Control

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.

Control of 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 firefighting 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.

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.

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

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 decor.

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 than 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

Once an extinguisher is selected, purchased, and installed, it is the responsibility of 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.

Fire Safety Inspections & Housekeeping

First line supervisors and Safety Committees are responsible for conducting work site surveys that include observations of compliance with the Fire Safety Program. These surveys should include observations of worksite 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 Exits

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 its 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.

Emergency Plan for Persons with Disabilities

The first line supervisor is assigned the responsibility to assist Persons with Disabilities (PWD) 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 PWD is removed from danger.

- Supervisors, alternates, and the person with a disability will be trained on available escape routes and methods.
- A list of persons with disabilities is kept in the _____ Office.
- 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/Supervisors

Emergency Coordinators/Supervisors 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 your Supervisor and other occupants.

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 you 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 monitor so he/she can determine that all personnel have evacuated your area.
5. Remain outside until competent authority 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.

One Source Integratin, Inc.

Contractor Safety Program

Purpose: The Contractor Safety Program is designed to protect company and contractor employees, equipment and facilities from injury, accident or loss. Contractors are persons not directly employed by the company who provide specific labor or services.

Scope: This policy covers all contractors working on behalf of or under the direct supervision of OSI, Inc.

Examples of Contractor Employers are:

- Construction Companies
- Utility Service or Repair Companies
- Janitorial Services
- Pest Control Services
- Food Service and Vending Groups
- Transportation & Shipping Services
- Raw Product Suppliers

As a condition of doing business with OSI, Inc., all contractors must comply with applicable local, state, federal regulatory requirements and our company safety procedures and policies. Specific compliance is required in the following:

Responsibilities

Management

- Ensure contracts for bids contain appropriate information concerning the Contractor Safety program including all requirements
- Provide access to MSDS material upon request of contractors
- Monitor all contractor activity at their location
- Ensure that the area in which the contractor's employees are working are maintained safe and free of hazards

- Provide contractors with specific safety program requirements

Contractors

- Conduct daily safety inspections of all assigned areas
- Identify and correct hazards
- Provide contractor employees with requires personal protective equipment
- Ensure Contractor Employees have the proper training for assigned tasks
- Coordinate with OSI, Inc. job-site Supervisor for safety related issues
- Maintain required insurance coverage
- Establish and maintain an effective Safety and Health Program
- Establish and maintain an effective Housekeeping Program

Minimum Insurance Requirements

Contractors and Vendors are required to meet minimum Insurance Requirements according to the following schedule:

Coverage Minimum per Occurrence Limits

- Automobile Liability \$ _____
- General Liability \$ _____
- Products Liability \$ _____
- Completed Operations Liability \$ _____
- Workmen's Compensation \$ _____

Certificates of Insurance

Contractors must provide the company a Certificate of Insurance. The Certificate must list OSI, Inc., its Divisions and Subsidiaries as a Certificate Holder with notification of cancellation or non-renewal. Without the Certificate, the Company may have to assume the liabilities and responsibilities for the Contractor.

Training

Information and training is to be made available to contractors in the form of copies of written safety programs. Written programs from the Required Training list, based on hazard exposure are to be presented to contractors.

Required Training for Contractor Employees

- General Safety Rules, including reporting of Unsafe Conditions
- Hazard Communication & chemical safety
- Lockout/Tagout
- Electrical Safety
- Evacuation Routes, Alarms & Procedures
- Hot Work Program
- Confined Space Program
- Process Safety Management
- Personal Protective Equipment
- Fall Prevention

Safety Reviews

A comprehensive pre-work safety review conference will be conducted for all contractor work that involves:

- construction & renovation
- equipment installation & repair
- utility modifications
- electrical & plumbing work
- work at elevated locations
- confined space entry
- use of toxic substances
- hot work or welding
- work on systems covered by PSM or RMP

Safety review participants will consist of company and contractor safety representatives. All task specific safety concerns shall be addressed and resolved prior to commencement of work by the contractor

Hazardous Chemical/Substance Notification

Contractor must follow the OSHA Hazard Communication Standard requirements including use safe handling and storage of chemicals. Contractors are required to inform - the-Company of all hazardous substances which may be brought on to OSI, Inc. property, including providing the most current Material Safety Data Sheet for each substance. All spills and leaks of hazardous chemicals must be immediately reported to the OSI, Inc. Manager or Job-site Supervisor.

Welding & Hot-Work Permit Program

All hot work and welding operations must be conducted under the control of a Hot Work Permit that has been pre-approved by OSI, Inc.

Confined Space Entry

Contractor employees are not authorized to enter any confined spaces on all OSI, Inc. property unless specifically required by the service or construction contract.

Work at Elevated Locations

Required fall protection equipment shall be used by all contractor employees when working at elevated locations.

Other Policies and Procedures

All contractor employees shall adhere to all other OSI, Inc. policies, including but not limited to: access to company facilities, company equipment, use of controlled substances, firearm & explosive restrictions, harassment of other persons, and traffic and parking regulations.