SDV Comprehensive Safety Plan

January 2012

SDV CONSTRUCTION

Table of Contents

Safety and Health Plan 4

Accident/Event Reporting and Investigation Plan 7

Aerial Lift Safety Program 10

Daily Inspection Checklist: 13

Crane Safety Program 14

Safety Disciplinary Policy 17

Safety Disciplinary Policy Form 18

Electrical Safety Plan for Construction 19

Appendix 35

Excavation Safety Program 43

Fall Protection Safety Program 46

Fire Prevention Program 50

First Aid Program 53

Gases, Vapors, Fumes, Dusts, and Mists Safety Program 55

Ground Fault Circuit Interrupter Program 57

Hand and Power Tool Safety Program 58

Hazard Communication Program 63

Hearing Conservation Program 68

Hoisting & Rigging Safety Program 70

Housekeeping Program 74

Industrial Hygiene Program 78

Lead Safety Program 81

Lockout/Tagout Program 84
Attachment A 89
Attachment B 90
Attachment C 91
Attachment D 92
Attachment E 93
Liquid Petroleum (Lp) Gas Compliance Program 95
Machine/Equipment & Guarding Plan 97
Permit-Required Confined Space Entry Program 100
Power Industrial Truck Program 106
Personal Protective Equipment (PPE) Program 109
Respiratory Protection Program 114
Scaffolding Safety Program 120
Stairways and Ladder Safety Program 124
Steel Erection Safety Program 127
Vehicle Policy 137
Welding & Cutting Program 140
Work Site Identification (ASM Bulletin Board) 143

Safety and Health Plan

Purpose

We at SDV Construction, Inc. are committed to the safety and health of our employees, and know that our strength as a company is only as good as the strength of each individual. We will strive to place safety and health above all else, and will involve all employees at every level in establishing, implementing, and evaluating our efforts. This written Safety and Health Plan is intended to eliminate, or reduce the severity of job-related illnesses and injuries at this company. It is our intent to comply with the requirements of 29 CFR 1926.20 and .21, which require employers to maintain programs as necessary to keep employees from working in hazardous or dangerous conditions. ***This Safety and Health Plan is required reading for all employees and subcontractors prior to starting work under any contract, and subcontractors are contractually obligated to comply with this plan.***

Management Leadership

Our Safety Officer is the Safety and Health Plan Administrator. He/She coordinates the Safety and Health Program elements for our company.

He/She is responsible for setting up and managing the program so that Superintendents, Foremen, employees, and Subcontractors know what our company expects. Our Program Administrator is accountable for meeting these responsibilities. He/She has the authority (delegated ability to take action) to carry out his/her duties in a timely manner so that progress is made in meeting program goals. He/She is also provided with sufficient resources, information, and training to meet those responsibilities.

Our Safety Officer has examined our existing policies and practices to ensure that they encourage and do not discourage reporting and participation in our program. In this way, early reporting of injuries, illnesses, and hazards and meaningful employee participation in the program are more likely to occur. The reporting of injuries, illnesses, and hazards is especially important because the success of the program depends on such reporting.

Our Safety Officer communicates with employees and Subcontractors about the program so they have the information necessary to protect themselves from hazards and have effective input into the operation of the program. All Subcontractors must follow safety rules and procedures incorporated by SDV Construction and this Safety Plan.

Each of our company on site safety officers will maintain the minimum qualifications as outlined in the current SDV Construction SOP's. They each have several years of documented experience in safety inspection and coordination and are knowledgeable in the safety principles and practices of the construction industry. Each safety officer will remain knowledgeable in occupational health and safety laws and procedures thru formal courses and annual evaluation. They are responsible for ensuring that all aspects of our plan are being followed in a daily basis and periodically evaluating the effectiveness of this plan.

Our company safety officers are also responsible for ensuring that the Foreman, Superintendent or they conduct documented daily safety inspection. As needed we will hire independent safety consultants to assist in safety inspections. These third party inspections are solely to ensure that

employees of SDV Construction are working in a safe and healthy manner. These inspections are built into field operations for each project. If a specific project requires a safety officer to be present on site during active construction activities, the individual will be identified on that particular project specific safety plan along with method of compliance and required documentation that will need to be maintained on site for that particular project.

Employee Participation and Training

All SDV employees *and* subcontractor employees will be properly trained and expected to understand our safety and health plan. Each employee and subcontractor employee will have adequate training for the tasks that they are employed to perform, and will not be allowed to perform them prior to receiving training. At a minimum, each employee who will, or may have access to jobsites shall have a minimum of 10-Hours OSHA Training in construction safety and health. As required, field employees will have specific OSHA subpart training, and refresher training for tasks and activities they will be involved in.

Visitors

All visitors who wish to enter the job site must report to the onsite Superintendent or Foreman before entering the site. Visitors will receive an onsite briefing of the hazards associated with the work being performed at that time and how to enter and evacuate the site. This will be documented with a sign in sheet. No visitor will be allowed onsite without the proper PPE which will be indicated by the posted signage.

Contractor/Subcontractor Safety Compliance

All employees, subcontractors, employees of subcontractors tiers and visitors that are accessing a jobsite on behalf of SDV is required to comply with all safety rules set forth by all regulatory compliance agencies, SDV, and any written plans applicable to the respective project. Failure to do so will result in immediate removal from the site until SDV has had the opportunity to meet with the employee and management. At a minimum the individual and/or company will be required to re-review the project specific safety plan and be coached on the issues by our designated safety officer. If a determination is made each that an action was intentional, negligent or serious enough to have potentially caused harm to another individual or property, immediate termination will be enforced.

Definitions

The following definitions and abbreviations will apply throughout this document:

- *Subcontractor*: Refers to any company and their employees under contract to SDV Construction, Inc. for the execution of work as defined in the contract documents.
- *Competent Person*: Person capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- *Qualified Person*: Person whom, by possession of recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter, the work, or the project.

References

It is the intent to meet, or exceed all applicable regulations and guidelines in compliance with environmental, safety and health laws, rules and regulations of the Federal, State and Local governments while in the performance of construction and service work.
The standards include:

ANSI…Requirements for Personal Protective Equipment will be used when applicable for demolition and construction work.

29CFR Part 1910…General Industry Occupational Safety and Health Standards, which are applicable to construction, work.

29CFR1926…Safety and Health Regulations for Construction. The 29CFR 1926-revised edition dated February 1, 1999 was used for preparation of this plan.

Environmental Protection agency (EPA)…Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Known Methods as written and when applicable for construction.

National Electrical Code…Applicable sections and articles dependent on the type of work to be performed. The latest edition will be used.

NFPA…National Fire Protection Association: where applicable to construction.

NFPA 70E…Electrical safety requirements for employees. Applicable sections will be addressed as required and specifically addressing PPE. The latest edition will be used.

INTERNAL FIRE CODE (IFC) ANSI Z49.1, Sections 4.3 and E4…As applicable to fire safety and general work practices.

Nature of Work

SDV Construction in Albuquerque, N.M. is a General Building Contractor whose scope of expertise includes interior and exterior general construction of walls, floors, concrete, architectural finishes, millwork, glazing, door installations, etc. Electrical systems include panel boards and interior lighting with associated controls. Mechanical systems is removing the old system and adding a HVAC system, and limited plumbing necessary for kitchen equipment. This list is not meant to be a comprehensive list but rather a representative sample of previous projects.

All work shall be performed in accordance with the design drawings and specifications, lists, and schedules as indicated on the Master List generated for each project.

Accident/Event Reporting and Investigation Plan

Purpose

This Accident/Event Reporting and Investigation Plan prescribe methods and practices for reporting and investigating accidents. No matter how conscientious the safety effort at a company, accidents happen occasionally due to human or system error.

Therefore, this written plan is intended to provide a means to deal with all workplace accidents/events in a standardized way and demonstrate our company's compliance with the reporting requirements of 29 CFR 1904. In addition, it is the policy of the company to comply with all workers' compensation laws and regulations.

Administrative Duties

Our Safety Officer is responsible for developing and maintaining this written Accident/Event Reporting and Investigation Plan. This person is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan.

Event Reporting

At any time if a SDV employee or subcontractor becomes aware of a circumstance that would impact workers, the public, the environment or an unplanned disruption of normal operations, the circumstance must be reported. If the event could quickly become an emergency situation follow the "Emergency Action Plan" described below. All accidents and near misses are investigated.

Accident Reporting Procedures

All accidents, injuries, or illnesses, and equipment damage must be reported immediately to their foreman or direct supervisor. All incidents will be investigated to the appropriate level with regards to incident severity. The injured employee will fill out the "Notice of Accident" form. The foreman and the injured employee will fill out together the "Accident Investigation" form. SDV Construction, Inc. will not conduct accident investigations in order to place blame or find fault. A fair investigation will identify the "Root Cause" that, if corrected, will prevent recurrence of the accident. When an accident has occurred, the accident area shall be undisturbed (as much as possible) until the investigation is conducted.

Emergency Action

Emergency Action for life threatening injuries or illnesses; immediately call for medical assistance by dialing 911 on touchtone telephone.

1. Post medical and non-medical emergency numbers conspicuously at Project site. Ensure that all employees are aware of medical and non-medical numbers emergency numbers.
2. Transport personnel with non life-threatening injuries or illnesses that require medical attention to contractor's identified medical facility. **Concentra Medical Centers, 5700 Harper NE, Alb., NM PH. 823-9166 or 801 Encino Place NE, Alb., NM PH. 842-5151 (Subject to change, confirm with Safety Officer)**
3. Electrical Shock: Accompany an employee that has received an electrical shock for immediate attention to the above designated medical facility during standard working hours,

no matter how minor the shock appears. For non-standard working hours, seek medical attention in off-site facility. Notify Project Manager, Superintendent, or Safety Officer immediately after transporting individual to any medical facility.

4. Notification of Accidents, Injuries, or Illnesses: Verbal notification to Safety Officer shall be performed as soon as possible. Submit document "Report of Occupational Injury/Illness" to Safety Officer within 3 days.
    a. Non-Emergency Medical Incident: Notify Safety Officer or Superintendent within 24 hours
    b. Serious or Life-Threatening Accident or Illness: Notify Safety Officer and Superintendent after taking emergency action.
5. Substance Abuse Prevention and Testing: Use of drugs (including misuse of prescribed substances) or alcohol on site shall be grounds for removal of individual from work site, and may include other corrective actions.

Accident Investigation Procedures

Thorough accident investigations will help the company determine why accidents occur, where they happen, and any trends that might be developing. Such identification is critical to preventing and controlling hazards and potential accidents. Our Safety Officer will conduct investigations and is properly trained to do so. Proper equipment will be made available to assist in conducting an investigation by the safety officer. Interviews will be conducted and witnesses will be documented and be kept anonymous if so chosen. Witness statements are used to find a root cause of the incident and ways to avoid future incidents. Follow up inspection verifying that issues addressed have been solved and a similar incident will not occur.

Employee Involvement and Training

This plan is an internal document guiding the action and behaviors of employees. When hired or as needed our Safety Officer thoroughly explains to all employees why the Accident Reporting and Investigation Plan were prepared and how employees may be affected by it. Employees are informed on how to report an injury or illness.

Employees, and their representatives, are also provided limited access to our injury and illness records.

Copies of relevant OSHA 300 logs are provided by the next business day to all employees, former employees, and representatives who request them. Employees, former employees, and personal representatives who request "Notice of Accident" will also receive them by the end of the next business day. However, authorized employee representatives will only receive requested "Notice of Accident" within seven calendar days. All names will be removed.

The nature of injuries, root cause and corrective actions section will be provided and reviewed with all employees. All initial copies are provided to requesters free of charge. Additional copies involve a reasonable charge.

Our company does not discriminate against employees for:

- Reporting a work-related fatality, injury, or illness;
- Filing a safety and health complaint;
- Asking for access to occupational injury and illness records; or
- Exercising any rights afforded by the Occupational Safety and Health Act.

Event Notification

If any employee or subcontractor becomes aware of an event that could adversely impact work, the public, or the environment, or unplanned disruptions of normal operations it must be reported to the onsite supervisor as soon as possible.

If there is a situation in which atmospheric air monitoring is required on a job and the monitor indicates a possible or potential exposure based on the most recent PEL's published in the most current copy of the limits established by OSHA or ACGIH the exposure must be reported to the onsite supervisor as soon as possible.

Aerial Lift Safety Program

Purpose

It is SDV Construction, Inc. purpose in issuing these procedures to further ensure a safe workplace based on the following formal, written procedures for all employees or subcontractors who use aerial lifts on SDV Construction, Inc. jobsites. These procedures will be reviewed and updated as needed to comply with new OSHA and ANSI regulations. Our Safety Officer is the plan coordinator and is responsible for its implementation.

These standards are in effect for the following aerial lifts;

- Extendable boom platforms
- Aerial ladders
- Articulating boom platforms
- Vertical towers
- Scissor Lifts
- One man lifts

General Requirements

Aerial lifts have replaced ladders and scaffolding on many job sites due to their mobility and flexibility. They may be made of metal, fiber glass reinforced plastic, or other materials. They may be powered or manually operated, and are considered to be aerial lifts whether or not they can rotate around a primarily vertical axis. Many workers are injured or killed on aerial lifts each year. OSHA provides standards for aerial lift safety. The following requirements must be understood by all employees who will be working off aerial lifts at any point during employment at SDV Construction, Inc. Employees will test lift controls each day prior to use to determine they are in safe working condition and conduct a pre-start inspection to ensure the aerial lift is running properly. Fall Protection must be worn and a lanyard attached to the boom or basket when working from an aerial lift. We have listed requirements below for Operating, traveling and loading aerial lifts while at our jobsites. OSHA also has requirements for overhead protection and employee training those employees must understand prior to operating a lift for this company.

Pre-start Inspection

Prior to each work shift, conduct a pre-start inspection to verify that the equipment and all its components are in safe operating condition. Follow the manufacturer's recommendations and include a check of:

Vehicle components

- Proper fluid levels (oil, hydraulic, fuel and coolant)
- Leaks of fluids
- Wheels and tires
- Battery and charger
- Lower-level controls
- Horn, gauges, lights and backup alarms
- Steering and brakes

Lift components

- Operating and emergency controls
- Personal protective devices
- Hydraulic, air, pneumatic, fuel and electrical systems
- Fiberglass and other insulating components
- Missing or unreadable placards, warnings, or operational, instructional and control markings
- Mechanical fasteners and locking pins
- Cable and wiring harnesses
- Outriggers, stabilizers and other structures
- Loose or missing parts
- Guardrail systems

Do not operate any aerial lift if any of these components are defective until it is repaired by a qualified person. Remove defective aerial lifts from service (tag out) until repairs are made.

Fall Protection

Fall protection is very important when employees are working from aerial lifts. The following requirements must be followed by all employees;

- Use a body harness with a lanyard attached to the bucket.
- Ensure that access gates or openings are closed.
- Stand firmly on the floor of the bucket or lift platform.
- Do not climb on or lean over guardrails or handrails.
- Do not use planks, ladders, or other devices as a working position.
- Do not belt-off to adjacent structures or poles while in the bucket.

Operation/Traveling/Loading

Although the following information will be covered during lift training employees must follow the rules listed below at all times while using aerial lifts at this company;

- Do not exceed the load-capacity limits. Take the combined weight of the worker(s), tools and materials into account when calculating the load.
- Do not use the aerial lift as a crane.
- Do not carry objects larger than the platform.
- Do not drive with the lift platform raised (unless the manufacturer's instructions allow this).
- Do not operate lower level controls unless permission is obtained from the worker(s) in the lift (except in emergencies).
- Do not exceed vertical or horizontal reach limits.
- Do not operate an aerial lift in high winds above those recommended by the manufacturer.
- Do not override hydraulic, mechanical, or electrical safety devices.
- Do not operate lift in high winds!

Overhead Protection

Overhead hazards are present almost all the time when using aerial lifts. The following rules are in place for employee protection from overhead hazards;

- Be aware of overhead clearance and overhead objects, including ceilings.
- Do not position aerial lifts between overhead hazards if possible.
- Treat all overhead power lines and communication cables as energized, and stay at least 10 feet (3 meters) away.
- Ensure that the power utility or power line workers de-energize power lines in the vicinity of the work.

Training

Initial Training

Only trained and authorized persons are allowed to operate an aerial lift. Training should include:

- Explanations of electrical, fall, and falling object hazards
- Procedures for dealing with hazards
- Recognizing and avoiding unsafe conditions in the work setting
- Instructions for correct operation of the lift (including maximum intended load and load capacity)
- Demonstrations of the skills and knowledge needed to operate an aerial lift before operating it on the job
- When and how to perform inspections; and Manufacturer's requirements.

Employees Who Need Retraining

When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving aerial lifts we will re-train the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the employee has not been previously trained.
- Where changes in the types of aerial lifts in which an employee has not been previously trained.
- Where inadequacies in an affected employee's work involving aerial lifts indicate that the employee has not retained the requisite proficiency.

Daily Inspection Checklist:

Date: _____ Operator's Name: _____

Operator's Signature: _____ Aerial or Scissor Lift ID #_____

VEHICLE INSPECTION

____Oil level
____Hydraulic oil level
____Fuel level
____Check the lift and surrounding area for leaks
____Coolant level
____Tire pressure and condition of wheels and tires
____Battery and charger
____Ground control switches

CHECK OPERATIONS

____Horn
____Gauges
____Brakes
____Lights
____Steering
____Attachments or accessories
____Backup alarm or warning buzzer
____Warning lights

PLATFORM LIFT EQUIPMENT INSPECTION

____Lift and travel controls and switches
____Placards, decals and control ID labels
____Handrails, guardrails and safety chains
____Platform deck and toe boards
____Steering
____Attachments or accessories
____Backup alarm or warning buzzer
____Warning lights

If the aerial or scissor lift fails any part of the inspection, remove the key and report the problem to your supervisor. Do not attempt to make repairs unless you are a trained and authorized service person. **RECORD ANY MALFUNCTIONS, DAMAGES OR PROBLEMS:**

_____

_____

_____

_____

Crane Safety Program

Purpose

The purpose of the Crane Safety Program is to define the work practices and the inspection procedures to help ensure that the operators of the overhead cranes at the SDV Construction Inc. jobsites. Our goal is to protect employees from potential hazards associated with the movement of equipment and material. It is out intent to comply with Occupational Safety and Health Administration (OSHA) entitled "Overhead Cranes" (Code of Federal Regulations, 29CFR 1910.179, 1926.550). American National Standards Institute (ANSI) guidelines are also applicable to the operation and maintenance of overhead cranes (ANSI B30.2, ANSI B30.0, and ANSI B30.9C).

Administrative Duties

Our Safety Officer is our Crane Safety Program Administrator and is responsible for The Reviewing the Crane Safety Program on an annual basis and revises it as necessary.

Provide the technical assistance regarding the regulatory requirements of cranes, chains, slings, and hoists. Provide or arrange training for the safe operation of overhead cranes, and the inspection procedure for chains, slings and hoists.

Operator

The operator of overhead cranes (cranes and hoists that are two tons or larger) must be a physically fit and thoroughly trained, competent individual, and not using any drug that could impair physical, visual, or mental reactions or capabilities, and must understand all the regulations regarding crane safety. The operator has the authority to stop and refuse to handle loads whenever there is a safety concern.

Inspections

Overhead crane inspections are divided into two general classifications: Frequent Inspections and Periodic Inspections. Inspection checklists are completed as part of the inspection process and must be completed by the designated competent person. Inspection checklists shall be available for inspection.

Frequent Inspection

Rope slings, hooks and other lifting equipment shall be visually inspected prior to each day's use. All parts including chains, cables, ropes, hooks, etc., on overhead and gantry cranes shall be visually inspected daily for deformation, cracks, excessive wear, twists, stretch, or other signs of deterioration that may pose a hazard during use.

Hooks and chains shall be visually inspected daily, and monthly with a certification record which documents the date of inspection, the signature of the person who performed the inspection, and serial number or other identifier from the equipment. Hooks that have cracks should be replaced.

Periodic Inspections
Periodic inspections shall be conducted by a factory trained employee or a contract certified inspection service.

A complete inspection of the crane shall be performed at least every 12 months. The inspection should include the following:

- Noting any cracked corroded, worn or loose members or parts.
- Noting and replacing loose bolts and tightening those bolts.
- Testing the limit indicators (wind, load, etc), power plant and electrical apparatus.
- Load testing must be performed at no more than 125 percent of the rated load, unless it is otherwise recommended by the equipment manufacturer.
- Examining the electrical apparatus for any signs of pitting, or any deterioration of controller contactors, limit switches and push button stations.
- Travel distance steering.
- Testing the braking system for excessive wear on the lining, pawls and ratchets.
- Hooks and cables.

If any adjustments have to be made to the unit, the crane will not be operated until all the guards have been installed, all safety devices reactivated, and all maintenance equipment moved. If any defect is found, the crane will not be operated until the repair or the adjustment is made.

<u>Mobile Cranes</u>
It is our intent to comply with the manufacturer's specifications and limitations applicable to the operation of any or all cranes or derricks. The attachments that are used with a crane shall not exceed the capacity, rating or scope recommended by the manufacturer. The rated load capacities, recommended operating speeds, and special hazard warnings or instruction shall be conspicuously posted on all equipment.

The requirements are:

- A designated competent person will inspect all machinery and equipment prior to each use and during use, to make sure that it is in safe operating condition. If a defective part is found, all parts should be repaired or replaced.
- A thorough annual inspection of the hoisting machinery shall be made by a competent person. The dates and the result of the inspections for each hoisting machine and piece of equipment will be maintained by each department. The department will prepare a certification record which will include the date the crane items were inspected and serial number or other identifier for the crane that was inspected. The most recent certification will be retained on file until a new one is prepared.
- A signal person must be provided if the operator's view is obstructed
- All accessible areas within the swing radius of the rear of the rotating superstructure of the crane shall be barricaded in such a manner as to prevent an employee from being struck or crushed by the crane.
- All safety devices must be in proper working order before operation begins.
- Cranes must not be used unless ground conditions are able to support the equipment and any supporting materials per the manufacturer's specifications.

- All exhaust pipes shall be guarded or insulated in areas where contact by employees is possible in the performance of normal duties.
- All windows in cabs shall be safety glass, or equivalent. There should be no visible distortion that will interfere with the safe operation of the machine. Guard rails, handholds, and steps shall be provided on cranes for easy access to the car and the cab.
- Platforms and walkways shall have anti-skid surfaces.
- Manufacturer instructions and prohibitions must be followed when assembling and/or disassembling equipment. This can only be done by a qualified or competent person.
- Modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer.
- An accessible fire extinguisher of 2ABC rating or higher shall be available at all operator stations or cabs of equipment.

Working near power lines

If the equipment or machinery must be operated next to electrical lines, then the following procedures must be followed:

- For electrical lines that are rated 50 KV or below, the minimum clearance between the lines and any part of the crane or load shall be 10 feet.
- For lines rated over 50 KV, the minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 KV over 50 KV, or twice the length of the line insulator, but never less than 10 feet.
- If the equipment is in transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 KV and 10 feet for voltages over 50 KV, up to and including 345KV, and 16 feet for voltages up to and including 750 KV.
- A safety observer shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.
- Any overhead wire shall be considered to be an energized line unless documentation is available to determine that the electrical lines are de-energized.

Crane Operators Certification

Crane operators shall be properly trained and experienced in operation of crane or hoisting device. Crane operator shall have one of the following in possession during crane inspection and operation: Valid State of New Mexico Crane Operator's License or Certification that indicates completion of an industry-recognized, in-house training course based on American National Standards Institute (ANSI) standards for hoisting operators, and who is employed by the entity that taught the training course or contracted to have the training course taught.

Safety Disciplinary Policy

1. All employee's must comply with the Safety Rules and Standards established by the corporation and the customers we serve. Company officials will conduct physical inspections of the work areas and employees are also expected to inspect their work areas for safety hazards.

2. The company expects each of its employees to adhere to the highest standards of personal conduct. When an employee fails to follow Safety standards, violates Safety rules of the corporation and our customers or deviates from the norms of safe behavior SDV Construction will take any necessary disciplinary action warranted including up to immediate termination.

3. Other-than-serious hazard disciplinary action:
    a. 1st offense-Verbal warning
    b. 2nd offense-Employee will be written up
    c. 3rd offense –Employee will be written up and suspended up to 5 days without pay
    d. 4th offense-Termination

4. Serious and Imminent Danger Violation: The disciplinary action will depend on the opinion of the Safety Manager and/or the Supervisor of the employee and/or the Customer.

5. PPE: If an employee is found not wearing their Personal Protective Equipment in accordance with the company policy, they will be giving a verbal warning for the 1st offense, Written up for the 2nd offense, Suspended without pay up to 5 days on the 3rd offense, and Terminated on the 4th offense.

Other-than-serious hazard means any condition or practice which would be classified as an other-than-serious violation of applicable federal or state statutes, regulations or standards, based on criteria contained in the current OSHA field instructions or approved State Plan counterpart.

Serious hazard means any condition or practice which would be classified as a serious violation of applicable federal or state statutes, regulations or standards, based on criteria contained in the current OSHA field instructions or approved State Plan counterpart, except that the element of employer knowledge shall not be considered.

Imminent danger means any conditions or practices in a place of employment which are such that a danger exists which could reasonably be expected to cause death or serious physical harm immediately.

The Vice President of Operations is responsible for management of the safety disciplinary policy. All Project Managers, Superintendents, Foremen, and Safety Mangers/Coordinators are responsible for the enforcement of the safety program.

Safety Disciplinary Policy Form

Employee's Name_____

Job #_____ Job Location_____

Date of Violation_____ Time of Violation_____

Brief Description_____

_____

_____

Employee Comments _____

_____

_____

Type of Violation:

_____ Other Than Serious _____ Serious _____ Imminent Danger

Action:

_____Verbal Warning _____Written Warning _____ Suspension

_____Suspension Days without Pay _____ Termination

Other than Serious Hazard Disciplinary Action:

- 1st Offense - Verbal Warning
- 2nd Offence - Employee will be written up
- 3rd Offence - Employee will be written up and suspended up to 5 days without pay
- 4th Offence - Termination

Employee's Signature_____

Supervisors Signature_____

Electrical Safety Plan for Construction

Purpose

The purpose of this program is to:

- Demonstrate SDV Construction, Inc., compliance with OSHA electrical safety requirements necessary for the practical safeguarding of employees involved in construction work, found in Subpart K of 29 CFR 1926; and NFPA 70E
- Establish specific written procedures to protect the health and safety of all employees.

A written description of the program, including the specific procedures adopted by us, is available at all job sites for review by OSHA and any affected employee. This program applies to all work performed by SDV employees regardless of job site location.

Administrative Duties

- We have designated our Safety Officer to implement this electrical safety program. He is responsible for developing and maintaining this written Electrical Safety Plan for Construction. Our Safety Officer will evaluate work being performed and determine compliance with this program. Other responsibilities include:
- Provide or assist in the task of specific training for electrical work qualifications.
- Training recordkeeping.
- Periodically review and update this written program.
- Provide or coordinate general training for work units on the content of this program.
- Evaluate the overall effectiveness of the electrical safety program on a periodic basis.
- Assist work units in the implementation of this program.

Our Supervisors also play a crucial role in our safety program, their duties include:

- Promote electrical safety awareness to all employees.
- Ensure employees comply with ALL provisions of the electrical safety program.
- Ensure employees receive training appropriate to their assigned electrical tasks and maintain documentation of such training.
- Develop and maintain a listing of all qualified employees under their supervision.
- Ensure employees are provided with and use appropriate protective equipment.

Definitions

Authorized Lockout/Tagout Employee - A person who has completed the required hazardous energy control training and is authorized to lockout or tagout a specific machine or equipment to perform service or maintenance. A person must be certified as an Authorized Lockout/Tagout Employee in order to apply a lock or tag to control hazardous energy. All Authorized Lockout/Tagout Employees must be trained in:

- Electrical Safety/Lockout/Tagout Training
- Equipment specific procedures in their individual work units

Confined space - An enclosed space which has limited egress and access, and has an atmospheric hazard (e.g., explosive atmosphere or asphyxiating hazard) and/or other serious safety hazards (e.g., electrical hazard).

Damp location - Partially protected locations subject to moderate degrees of moisture, such as some basements.

De-energized electrical work - Electrical work that is performed on equipment that has been previously energized and is now free from any electrical connection to a source of potential difference and from electrical charges.

Disconnecting (or Isolating) switch - A device designed to close and/or open an electric circuit.

Dry location - Locations not normally subject to dampness or wetness, as in the case of a building under construction.

Energized electrical work - Repair, maintenance, troubleshooting, or testing on electrical circuits, components, or systems while energized (i.e., live).

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

Exposed electrical parts - Energized parts that can be inadvertently touched or approached nearer than a safe distance by a person. Parts not suitably guarded, isolated, or insulated. Examples include terminal contacts or lugs, and bare wiring.

Flash Protection Boundary - An approach limit distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.

Ground Fault Circuit Interrupt (GFCI) - A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the over-current protective device of the supply circuit.

Ground - A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth or to some conducting body that serves in place of the earth.

Hazardous Location - An area in which an airborne flammable dust, vapor or gas may be present and would represent a hazard if a source of ignition were present (see National Fire Protection Association (NFPA) Class I & II and Division 1 & 2).

Interlock - An electrical, mechanical, or key-locked device intended to prevent an undesired sequence of operations.

Isolating Switch - A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and is intended to operate only after the circuit has been opened by some other means.

Life Safety Equipment - Equipment that provides critical protection for safety in the event of an emergency or other serious hazard. Life safety equipment, which is electrically energized, should be

worked on using Energized Electrical Equipment (EEW) procedures to ensure that the protection provided by the equipment is not lost (e.g., fire alarm and evacuation).

Limited Approach Boundary – An approach limit is a distance from an exposed live part within which a shock hazard exists.

Lockout - The placement of a lock on an energy-isolating device according to procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout / tagout - A standard that covers the servicing and maintenance of machines and equipment in which the unexpected re-energization of the equipment or release of stored energy could cause injury to employees. It establishes performance requirements for the control of such hazardous energy.

Prohibited Approach Boundary – An approach limit distance from an exposed live part within which work is considered the same as making contact with the live part.

Qualified Electrical Worker – A qualified person trained and knowledgeable of construction and operation of equipment or a specific work method and is trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method.

Qualified electrical workers shall be familiar with the proper use of the special precautionary techniques, personal protective equipment (PPE), including arc-flash, insulating and shielding materials, and insulated tools and test equipment. A person can be considered qualified with respect to certain equipment and methods but is unqualified for others.

- An employee who is undergoing on-the-job training and who, in the course of such training, has performed duties safely at his or her level of training and who is under the direct supervision of a qualified person shall be considered to be qualified.
- Only a Qualified Electrical Worker is allowed to work on energized circuits.
- Qualified electrical workers **shall not** be assigned to work alone, except for replacing fuses, operating switches, or other operations that do not require the employee to contact energized high voltage conductors or energized parts of equipment, clearing trouble, or emergencies involving hazard to life or property.

Restricted Approach Boundary – An approach limit distance from an exposed live part within which there is an increased risk of shock, due to electrical arc-over combined with inadvertent movement, for personnel working in close proximity to the live part.

Remote-control Circuit - Any electric circuit that controls any other circuit through a relay or an equivalent device.

Service - The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

Service Equipment - The necessary equipment, usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the entrance of supply conductors to the building and intended to constitute the main control and means of cutoff of the supply.

Setting Up - Any work performed to prepare a machine or equipment to perform its normal production operation.

Switching Devices - Devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

Tagout - The placement of a tagout device on an energy-isolating device according to procedure to indicate that the equipment may not be operated until the tagout device is removed.

Voltage (of a circuit) - The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned.

Voltage, high - Circuits with a nominal voltage more than 50 volts.

Voltage, low - Circuits with a nominal voltage less than or equal to 50 volts.

Voltage, nominal - An approximate value assigned to a circuit or system for the purpose of conveniently designating its voltage class, e.g., 120/240, 480/277, and 600.

Wet location - Installations subject to saturation with water or other liquids.

Electrical Hazards

Electricity-related hazards include electric shock and burns, arc-flash burns, arc-blast impacts, and falls.

- **Electric shock and burns.** An electric shock occurs when electric current passes through the body. This can happen when touching an energized part. If the electric current passes across the chest or head, death can result. At high voltages, severe burns can result.
- **Arc-flash burns.** An electric arc flash can occur if a conductive object gets too close to a high-amp current source or by equipment failure (for instance, while opening or closing disconnects). The arc can heat the air to temperatures as high as $35{,}000^{o}$ F, and vaporize metal in the equipment. The arc flash can cause severe skin burns by direct heat exposure and by igniting clothing.
- **Arc-blast impacts.** The heating of air and vaporization of metal creates a pressure wave that can damage hearing and cause memory loss (from concussion) and other injuries. Flying metal parts are also a hazard.
- **Falls.** Electric shocks and arc blasts can cause falls, especially from ladders or unguarded scaffolding.

Portable Electrical Equipment and Extension Cords

The following requirements apply to the use of cord-and-plug-connected equipment and flexible cord sets (extension cords):

- Extension cords may only be used to provide temporary power.
- Portable cord-and-plug connected equipment and extension cords must be visually inspected before use on any shift for external defects such as loose parts, deformed and missing pins, or damage to outer jacket or insulation, and for possible internal damage such as pinched or crushed outer jacket. Any defective cord or cord-and-plug-connected equipment must be removed from service and no person may use it until it is repaired and tested to ensure it is safe for use.
- Extension cords must be of the three-wire type. Extension cords and flexible cords must be designed for hard or extra hard usage (for example, types S, ST, and SO). The rating or approval must be visible.
- Job-made extension cords are forbidden per the electrical code.
- Personnel performing work on renovation or construction sites using extension cords or where work is performed in damp or wet locations must be provided, and must use, a ground-fault circuit interrupter (GFCI).
- Portable equipment must be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
- Extension cords must be protected from damage. Sharp corners and projects must be avoided. Flexible cords may not be run through windows or doors unless protected from damage, and then only on a temporary basis. Flexible cords may not be run above ceilings or inside or through walls, ceilings or floors, and may not be fastened with staples or otherwise hung in such a fashion as to damage the outer jacket or insulation.
- Cords must be covered by a cord protector or tape when they extend into a walkway or other path of travel to avoid creating a trip hazard.
- Extension cords used with grounding-type equipment must contain an equipment-grounding conductor (i.e., the cord must accept a three-prong, or grounded, plug).
- Attachment plugs and receptacles may not be connected or altered in any way that would interrupt the continuity of the equipment grounding conductor. Additionally, these devices may not be altered to allow the grounding pole to be inserted into current connector slots. Clipping the grounding prong from an electrical plug is prohibited.
- Flexible cords may only be plugged into grounded receptacles. The continuity of the ground in a two-prong outlet must be verified before use. Adapters that interrupt the continuity of the equipment grounding connection may not be used.
- All portable electric equipment and flexible cords used in highly conductive work locations, such as those with water or other conductive liquids, or in places where employees are likely to contact water or conductive liquids, must be approved for those locations.
- Employee's hands must be dry when plugging and unplugging flexible cords and cord-and-plug connected equipment if energized equipment is involved.
- If the connection could provide a conducting path to employees hands (for example, if a cord connector is wet from being immersed in water), the energized plug and receptacle connections must be handled only with insulating protective equipment.

- Locking-type connectors must be properly locked into the connector.
- Lamps for general illumination must be protected from breakage, and metal shell sockets must be grounded.
- Temporary lights must not be suspended by their cords unless they have been designed for this purpose.
- Portable lighting used in wet or conductive locations, such as tanks or boilers, must be operated at no more than 12 volts or must be protected by GFCI's.
- Extension cords are considered to be temporary wiring, and must also comply with the section on "Requirements for Temporary Wiring" in this program.

Requirements for Temporary Wiring

Temporary electrical power and lighting installations 600 volts or less, including flexible cords, cables and extension cords, may only be used during and for renovation, maintenance, repair, or experimental work. The duration for temporary wiring used for decorative lighting for special events and similar purposes may not exceed 90 days. The following additional requirements apply:

- Ground-fault protection (e.g., ground-fault circuit interrupters or GFCI) must be provided on all temporary-wiring circuits, including extension cords, used on construction sites.
- In general, all equipment and tools connected by cord and plug must be grounded. Listed or labeled double insulated tools and appliances need not be grounded.
- Feeders must originate in an approved distribution center, such as a panel board, that is rated for the voltages and currents the system is expected to carry.
- Branch circuits must originate in an approved power outlet or panel board.
- Neither bare conductors nor earth returns may be used for the wiring of any temporary circuit.
- Receptacles must be of the grounding type. Each branch circuit must contain a separate equipment-grounding conductor, and all receptacles must be electrically connected to the grounding conductor.
- Flexible cords and cables must be of an approved type and suitable for the location and intended use. They may only be used for pendants, wiring of fixtures, connection of portable lamps or appliances, elevators, hoists, connection of stationary equipment where frequently interchanged, prevention of transmission of noise or vibration, data processing cables, or where needed to permit maintenance or repair. They may not be used as a substitute for the fixed wiring, where run through holes in walls, ceilings or floors, where run through doorways, windows or similar openings, where attached to building surfaces, or where concealed behind building walls, ceilings or floors.
- Suitable disconnecting switches or plug connects must be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.
- Lamps for general illumination must be protected from accidental contact or damage, either by elevating the fixture or by providing a suitable guard. Hand lamps supplied by flexible cord must be equipped with a handle of molded composition or other approved material and must be equipped with a substantial bulb guard.

- Flexible cords and cables must be protected from accidental damage. Sharp corners and projections are to be avoided. Flexible cords and cables must be protected from damage when they pass through doorways or other pinch points.

Wet or Damp Locations

Work in *wet* or *damp* work *locations* (i.e., areas surrounded or near water or other liquids) should not be performed unless it is absolutely critical. Electrical work should be postponed until the liquid can be cleaned up. The following special precautions must be incorporated while performing work in *damp locations*:

- Only use electrical cords that have Ground Fault Circuit Interrupters (GFCIs);
- Place a dry barrier over any wet or damp work surface;
- Remove standing water before beginning work. Work is prohibited in areas where there is standing water;
- Do not use electrical extension cords in wet or damp locations; and
- Keep electrical cords away from standing water.

Working on De-energized equipment

Electrically Safe Condition

The most important principle of electrical safety is to **assume all electric circuits are energized unless each involved worker ensures they are not.** Every circuit and conductor must be tested every time work is done on them. Proper PPE must be worn until the equipment is proven to be de-energized.

- Voltage rated gloves and leather protectors must be worn
- Electrically insulated shoes should be worn
- Approved insulating mats
- Safety glasses must be worn
- The required Arc Flash PPE must also be worn

The National Fire Protection Association (NFPA) lists six steps to ensure conditions for electrically safe work.

1. Identify all sources of power to the equipment. Check applicable up-to-date drawings, diagrams, and identification tags.
2. Remove the load current, and then open the disconnecting devices for each power source.
3. Where possible, visually verify that blades of disconnecting devices are fully open or that drawout-type circuit breakers are fully withdrawn.
4. Apply lockout/tagout devices in accordance with a formal, written policy.
5. Test each phase conductor or circuit part with an adequately rated voltage detector to verify that the equipment is de-energized. Test each phase conductor or circuit part both phase-to-phase and phase-to-ground. Check the voltage detector before and after each test to be sure it is working.
6. Properly ground all possible sources of induced voltage and stored electric energy (such as, capacitors) before touching. If conductors or circuit parts that are being de-energized could contact other exposed conductors or circuit parts, apply ground-connecting devices rated for the available fault current.

The process of de-energizing is "live" work and can result in an arc flash due to equipment failure. When de-energizing, follow the procedures described in "Working On or Near Live Equipment."

Vehicular and Mechanical Equipment

When work must be performed near overhead lines, the lines shall be de-energized and grounded, or other protective measures shall be provided before work is started.

- If the lines are to be de-energized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to de-energize and ground them.
- If protective measures, such as guarding, isolating or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools or equipment

Working on or near energized equipment

Working on live circuits means actually touching energized parts. Working near live circuits means working close enough to energized parts to pose a risk even though work is on de-energized parts. Common tasks where there may be a need to work on or near live circuits include:

- Taking voltage measurements
- Opening and closing disconnects and breakers
- Racking breakers on and off the bus
- Removing panels and dead fronts
- Opening electric equipment doors for inspection

Facilities should adopt standard written procedures and training for these common tasks. For instance, when opening and closing disconnects, use the **left-hand rule** when possible (stand to the right side of the equipment and operate the disconnect switch with the left hand).

Energized Electrical Work Permit For 240 Volts and Higher

- If live parts are not placed in an electrically safe condition, work to be performed shall be considered energized electrical work and shall be performed by written permit only.

- Work related to testing, troubleshooting, and voltage measuring may be completed without a permit provided appropriate safe work practices and PPE are used.

- The permit must be originated by the qualified electrical worker.

- Energized Work Permits shall be submitted to the appropriate supervisor for each job site.

- The permit must be posted in an appropriate location where the energized work is taking place for the duration of the task.

Approach Distances to Exposed Live Parts

The National Fire Protection Association (NFPA) defines 3 approach distances for shock hazards and one for arc flash.

- The **limited approach boundary** is the distance from an exposed live part within which a shock hazard exists.

- The **restricted approach boundary** is the closest distance to exposed live parts a qualified person can approach with without proper PPE and tools. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with live parts or inside the prohibited approach boundary. To cross the restricted approach boundary, the qualified person must:

    1. Have an energized work permit that is approved by the supervisor or manager responsible for the safety plan.
    2. Use PPE suitable for working near exposed lived parts and rated for the voltage and energy level involved.
    3. Be certain that no part of the body enters the prohibited space.
    4. Minimize the risk from unintended movement, by keeping as much of the body as possible out of the restricted space; body parts in the restricted space should be protected.

- The **prohibited approach boundary** is the minimum approach distance to exposed live parts to prevent flashover or arcing. Approaching any closer is comparable to making direct contact with a live part. To cross the prohibited approach boundary, the qualified person must:

    1. Have specified training to work on exposed live parts.
    2. Have a permit with proper written work procedures and justifying the need to work that close.
    3. Do a risk analysis.
    4. Have (2) and (3) approved by the appropriate supervisor.
    5. Use PPE appropriate for working near exposed live parts and rated for the voltage and energy level involved.

- The **Flash Protection Boundary** is the approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.

1. Use PPE appropriate for working near exposed live parts and rated for the voltage and energy level involved.
2. For systems of 600 volts and less, the flash protection boundary is 4 feet, based on an available bolted fault current of 50 kA and a clearing time of 6 cycles for the circuit breaker to act, or any combination of fault currents and clearing times not exceeding 300 kA cycles.
3. When working on de-energized parts and inside the flash protection boundary for nearby live exposed parts:

a. If the parts cannot be de-energized, use barriers such as insulted blankets to protect against accidental contact or wear proper PPE.

Other Precautions
When working on de-energized the parts, but still inside the flash protection boundary for nearby live exposed parts:

- If the parts cannot be de-energized, barriers such as insulated blankets must be used to protect against accidental contact or PPE must be worn.

- Employees shall not reach blindly into areas that might contain exposed live parts.

- Employees shall not enter spaces containing live parts unless illumination is provided that allows the work to be performed safely.

- Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or metal frame glasses) shall not be worn where they present an electrical contact hazard with exposed live parts.

- Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with live parts. Such materials and equipment include, but are not limited to long conductive objects such as ducts, pipes, tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members, and chains.

- When an employee works in a confined space or enclosed spaces (such as a manhole or vault) that contains exposed live parts, the employee shall use protective shields, barriers or insulating materials as necessary to avoid contact with these parts. Doors, hinged panels, and the like shall be secured to prevent them from swinging into employees. Refer to the confined space

Personal Protective Equipment

General Requirements

- Employees working in areas where there are potential electrical hazards must be provided with and use personal protective equipment (PPE) that is appropriate for the specific work to be performed. The electrical tools and protective equipment must be specifically approved, rated, and tested for the levels of voltage of which an employee may be exposed.

- Each facility shall provide electrical protective equipment (Arc Flash Gear)) required by this program. Such equipment shall include 11 calorie, and 40 calorie rated Arc Flash apparel (until a full arc flash hazard analysis is made), eye protection, head protection, hand protection, insulated footwear, and face shields where necessary.

Protective Clothing Characteristics

Category	Cal/cm^2	Clothing
0	1.2	Untreated Cotton
1	5	Flame retardant (FR) shirt and FR pants
2	8	Cotton underwear, FR shirt and FR pants
3	25	Cotton underwear, FR shirt, FR pants and FR coveralls
4	40	Cotton underwear, FR shirt, FR pants and double layer switching coat and pants

- Employees shall wear nonconductive head protection whenever there is a danger of head injury from electric shock or burns due to contact with live parts or from flying objects resulting from an electrical explosion.
- Employees shall wear protective equipment for the eyes whenever there is a danger of injury from electric arcs, flashes, or from flying objects resulting from an electrical explosion.
- Employees shall wear rubber insulating gloves where there is a danger of hand or arm contact with live parts or possible exposure to arc flash burn.
- Where insulated footwear is used as protection against step and touch potential, dielectric overshoes shall be required. Insulated soles shall not be used as primary electrical protection.
- Face shields without arc rating shall not be used for electrical work. Safety glasses or goggles must always be worn underneath face shields.
- Additional illumination may be needed when using tinted face shields as protection during electrical work.
- Electrical Protective Equipment must be selected to meet the criteria established by the American Society of Testing and Materials (ASTM) and by the America National Standards Institute (ANSI).
- Insulating equipment made of materials other than rubber shall provide electrical and mechanical protection at least equal to that of rubber equipment.
- PPE must be maintained in a safe, reliable condition and be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage.
- Employees must use insulated tools and handling equipment that are rated for the voltages to be encountered when working near exposed energized conductors or circuit. Tools and handling equipment should be replaced if the insulating capability is decreased due to damage. Protective gloves must be used when employees are working with exposed electrical parts above fifty (50) volts.
- Fuse handling equipment (insulated for circuit voltage) must be used to remove or install fuses when the fuse terminals are energized. Ropes and hand lines used near exposed energized parts must be non-conductive.
- Protective shields, barriers or insulating materials must be used to protect each employee from shock, burns, or other electrical injuries while that person is working near exposed energized parts that might be accidentally contacted or where dangerous electric heating or arcing might occur.

Flame-Resistant Apparel & Under Layers

- FR apparel shall be visually inspected before each use. FR apparel that is contaminated or damaged shall not be used. Protective items that become contaminated with grease, oil flammable liquids, or combustible liquids shall not be used.
- The garment manufacturer's instructions for care and maintenance of FR apparel shall be followed.
- When the apparel is worn to protect an employee, it shall cover all ignitable clothing and allow for movement and visibility.
- FR apparel must cover potentially exposed areas as completely as possible. FR shirt sleeves must be fastened and FR shirts/jackets must be closed at the neck.
- Non-melting, flammable garments (i.e. cotton, wool, rayon, silk, or blends of these materials) may be used as under layers beneath FR apparel.
- Meltable fibers such as acetate, nylon, polyester, polypropylene, and spandex shall not be permitted in fabric under layers next to skin. (An incidental amount of elastic used on non-melting fabric underwear or socks shall be permitted).
- FR garments worn as outer layers over FR apparel (i.e. jackets or rainwear) must also be made from FR material.
- Flash suits must permit easy and rapid removal by the user.

Rubber Insulating Equipment

- Rubber insulating equipment includes protective devices such as gloves, sleeves, blankets, and matting.
- Insulating equipment must be inspected for damage before each day's use and immediately following any incident that could have caused damage.
- An air test must be performed on rubber insulating gloves before each use.
- Insulating equipment found to have defects that might affect its insulating properties must be removed from service until testing indicates that it is acceptable for continued use.
- Where the insulating capability of protective equipment is subject to damage during use, the insulating material shall be protected by an outer covering of leather or other appropriate materials.
- Rubber insulating equipment must be tested according to the schedule supplied by the manufacturer.
- Rubber insulating equipment must be stored in an area protected from light, temperature extremes, excessive humidity, ozone, and other substances and conditions that my cause damage.
- No repairs to rubber insulating equipment shall be attempted without the approval of the safety manager or coordinator.

Insulated Tools and Materials

- Only insulated tools and equipment shall be used within the Limited Approach Boundary of exposed energized parts.
- Insulated tools shall be rated for the voltages on which they are used.
- Insulated tools shall be designed and constructed for the environment to which they are exposed and the manner in which they are used.
- Fuse or fuse holder handling equipment, insulated for the circuit voltage, shall be used to removed or install a fuse if the fuse terminals are energized.
- Ropes and hand-lines used near exposed energized parts shall be nonconductive.
- Portable ladders used for electrical work shall have nonconductive side rails.

Access Limiting Equipment

- Barricades shall be used in conjunction with safety signs to prevent or limit access to work areas containing live parts. Conductive barricades shall not be used where they might cause an electrical hazard. Barricades shall be placed no closer than the Limited Approach Boundary.
- If signs and barricades do not provide sufficient protection, an attendant will be assigned to warn and protect pedestrians. The primary duty of the attendant shall be to keep an unqualified person out of the work area where an electrical hazard exists. The attendant shall remain in the area as long as there is a potential exposure to electrical hazards.

<u>Working Space</u>

- **Spaces about Electric Equipment**. Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operating and maintenance of such equipment. Enclosures that house electric apparatus and are controlled by lock and key shall be considered accessible to qualified persons.
- **Working Space.** Working space for equipment operating at 600 volts, nominal, or less to ground and likely to require examination, adjustment, services or maintenance while energized shall comply with the dimensions of 70E 400.15(A)(1), 400.15(A)(2), and 400.15(A)(3) or as required or permitted elsewhere in the 70E Standard.
- **Depth of Working Space**. The depth of the working space in the direction of live parts shall be not less than that indicated in Table 400.15(A)(1) unless the requirements of 400.15(A)(1)(a), 400.15(A)(1)(b), or 400.15(A)(1)(c) are met. Distances shall be measured from the exposed live parts if such are exposed or from the enclosure or opening if the live parts are enclosed.

Table 400.15(A)(1) Working Spaces

Nominal Voltage to Ground	Minimum Clear Distance		
	Condition 1	**Condition 2**	**Condition 3**
0-150	900mm(3 ft)	900 mm(3 ft)	900mm(3 ft)
151-600	900mm(3 ft)	1m(3-1/2 ft)	1.2 m (4 ft)

Condition 1: Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts to ground shall not be considered live parts.

Condition 2: Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls shall be considered as grounded surfaces.

Condition 3: Exposed live parts on both sides of the work space (not guarded as provided in condition 1) with the operator between.

- **Dead-front Assemblies**. Working space shall not be required in the back or sides of assemblies, such as dead-front switchboards or motor control centers, where all connections and all renewable or adjustable parts, such as fuses or switches, are accessible from locations other than the back or sides. Where rear access is required to work on non-electrical parts on the back of enclosed equipment, a minimum horizontal working space of 762mm (30 in) shall be provided.

- **Low Voltage**. Smaller working spaces can be permitted where all un-insulated parts operate at not greater than 30 volts RMS, 42 volts peak, or 60 volts dc.

- **Existing Buildings.** In existing buildings were electric equipment is being replaced, Condition 2 working clearance shall be permitted between dead-front switch boards, panel boards, or motor control centers located across the aisle from each other where conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on bother sides of the aisle from being open at the same time. Qualified electrical workers who are authorized will service the installation.

Width of Working Space. The width of the working space in front of the electrical equipment shall be the width of the equipment or 750 mm (30 in), whichever is greater. In all cases, the work space shall permit at least a 90 degree opening of equipment doors or hinged panels.

Height of Working Space. The workspace shall be clear and extend from the grade, floor, or platform to the height required by 70E 400.15(E). Within the height requirements of this section, other equipment that is associated with the electrical installation and is located above or below the electrical equipment shall be permitted to extend not more than 150 mm (6 in) beyond the front of the electrical equipment.

Clear Spaces. Working space required by the 70E standard shall not be used for storage. When normally enclosed live parts operating at 50 volts or more are exposed for inspection or service, the working space, if in a passageway or general open spaced shall be suitably guarded.

Access and Entrance to Working Space

- Minimum Required. At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment.

- Large Equipment. For equipment rated 1200 amperes or more and over 1.8 m (6ft) wide that contains over current devices, switching devices, or control devices, there shall be one entrance to the required working space not less than 610 mm (24in) wide and 2.0 m (6-1/2 ft) high at each end of the working space. Where the entrance has a personnel door(s0, the doors (s) shall open in the direction of egress and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressures. A single entrance to the required working space shall be permitted where either of the conditions in 400.14(c)(2)(a) or 400.14(c)(2)(b) is met.

- Unobstructed Exit. Where the location permits a continuous and unobstructed way of exit travel, a single entrance to the working space shall be permitted.

- Extra Working Space. Where the depth of the working space is twice that required by 400.15(A)(1), a singled entrance shall be permitted. It shall be located so that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 400.15(A)(1) for equipment operating at that voltage and in that condition.

Illumination

Illumination shall be provided for all working spaces about service equipment, switchboards, panel boards, or motor control centers installed indoors. Additional lighting outlets shall not be required where the work space is illuminated by an adjacent light source. In electrical equipment rooms, the illumination shall not be controlled by automatic means only.

Headroom

The minimum headroom of working spaces about service equipment, switchboards, panel boards, or motor control centers shall be 2.0 m (6-1.2 ft). Where the electrical equipment exceeds 2.0 m (61/2 ft) in height, the minimum headroom shall not be less than the height of the equipment.

Dedicated Equipment Space

All switchboards, panel boards, distribution boards, and motor control centers shall be located in dedicated spaces and protected from damage. *Exception: Control equipment that by its very nature or because of other rules of the standard must be adjacent to or within sight of the operating machinery shall be permitted in those locations.*

Training Requirements

Workers near energized, or potentially energized electrical circuitry of fifty (50) volts to ground or greater, shall be trained in energized electrical safe work practices and procedures and retrained as necessary.

Qualified Electrical Worker

Employees must receive training in avoiding the electrical hazards associated with working on or near exposed energized parts prior to performing energized electrical work. Such training will be provided when the employee is initially assigned to the job and refresher training will be provided every three years or when conditions change.

The following items are to be included in the training of Qualified Electrical Workers:

- Demonstrate a working knowledge of the National Electrical Code.
- The Lockout/Tagout Training Program including safe work practices required to safely de-energize electrical equipment.
- Universal electrical safety procedures.
- Skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
- Perform on-the-job training with a qualified electrical worker.
- Skills and techniques necessary to determine the nominal voltage of exposed live parts.
- The approach distances specified in Table 130.2(C) and the corresponding voltages to which the qualified electrical worker will be exposed.
- Selection and use of proper work practices, personal protective equipment, tools, insulating and shielding materials and equipment for working on or near energized parts.

Qualified Electrical Workers must be also be trained in recognizing signs and symptoms of electric shock, heart fibrillation, electric burns, and proper first aid protocols for these conditions. They must have the following training:

- Basic Cardio Pulmonary Resuscitation (CPR)
- Automatic External Defibrillator (AED)
- Contacting emergency personnel and basic first aid.

Documentation of Training and Experience

Documentation of training shall be kept by each institution, campus or agency. Experience received by Qualified Electrical Workers must be maintained for all personnel covered by this program. Documentation is necessary to demonstrate that individuals have met the training and experience requirements for the types of work being performed.

Appendix

Energized Electrical Work Permit.

Electrical Safety Training Checklist

Hazard/Risk Category Selections Table

PPE Matrix Table

Protective Clothing Characteristics Table

Simplified Protective Clothing Table

Table 130(2). Approach boundaries to live parts for shock prevention

(All dimensions are distance from live part to employee)

	Limited approach boundary			
Nominal system voltage range, phase to phase	**Exposed movable conductor**	**Exposed fixed- circuit part**	**Restricted approach boundary (allowing for accidental movement)**	**Prohibited approach boundary**
0 to 50 volts	Not specified	Not specified	Not specified	Not specified
51 to 300 volts	10 ft. 0 in.	3 ft. 6 in.	Avoid contact	Avoid contact
301 to 750 volts	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.	0 ft. 1 in.
751 to 15 kV	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.	0 ft. 7 in.
15.1 kV to 36 kV	10 ft. 0 in.	6 ft. 0 in	2 ft. 7 in.	0 ft. 10 in.
36.1 kV to 46 kV	10 ft. 0 in.	8 ft. 0 in	2 ft 9 in.	1 ft. 5 in.
46.1 kV to 72.5 kV	10 ft. 0 in.	8 ft. 0 in.	3 ft 2 in.	2 ft. 1 in.
72.6 kV to 121 kV	10 ft. 8 in.	8 ft. 0 in.	3 ft. 3 in.	2 ft. 8 in.
138 to 145	11 ft 0 in	10 ft. 0 in.	3 ft. 7 in	3 ft. 1 in.
161 kV to 169 kV	11 ft 8 in.	11 ft. 8 in.	4 ft. 0 in.	3 ft. 6 in.
230 kV to 242 kV	13 ft. 0 in.	13 ft. 0 in.	5 ft. 3 in.	4 ft. 9 in.
345 kV to 262 kV	15 ft. 4 in	15 ft. 4 in.	8ft. 6 in.	8 ft. 0 in.

Source: From a portion of table 2-1.3.4, Approach Boundaries to Live Parts for Shock Protection (NFPA 70E *Standard for Electrical Safety Requirements for Employee Workplaces, 2004 edition*).

FR - flame resistant. ATPV - arc thermal performance exposure value of the clothing in calories/cm2. *Source:* Based on Table F-1 in appendix F of NFPA 70E, *Electrical Safety Requirements for Employee Workplaces,* 2000.

ENERGIZED ELECTRICAL WORK PERMIT
(For Applications of 240 volts or greater)

1. Work Location: _____ _____

2. Work order/project #: _____

3. Description of the work to be done: _____

_____

_____

_____

_____

_____

4. Check the following considerations when they apply:

☐ Work is within the restricted approach boundary and there is a work plan

☐ Work is within the prohibited approach boundary, it is very hazardous and there is a work plan

☐ Request to shut down equipment was made

☐ Conducted a shock hazard analysis

☐ Shock protection boundaries have been determined

☐ Flash hazard analysis has been made and the results are known

☐ Flash protection boundary has been determined

☐ Personal protective equipment including tools needed for the job have been determined and are available

☐ Unqualified persons are restricted from the work area

☐ Safe work practices that need to be employed have been considered

☐ Job can be done safely

_____ _____

(Signature, Electrically Qualified Person) (Date)

_____ _____

(Signature, Immediate Supervisor) (Date)

ELECTRICAL SAFETY TRAINING CHECKLIST

ELECTRICAL SAFETY TRAINING CHECKLIST			
TRAINING ITEM	**YES ☑**	**N/A ☑**	**COMMENTS**
SCOPE AND TRAINING			
1. All employees who work on, near or with premises wiring, wiring for connections to supply, other wiring, and installation of optical fiber cable along with electrical conductors have been trained as either qualified or unqualified workers.	❑	❑	
2. Unqualified person have been trained in and are familiar with any electrically related safety practices not covered by this standard but necessary for their safety.	❑	❑	
3. Qualified persons trained in and familiar with:			
a) Skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.	❑	❑	
b) Voltage determination.	❑	❑	
c) Clearance distances that must be maintained.	❑	❑	
d) Training conducted has been specific to the hazards to which the employee may or will be exposed and their particular job duties.	❑	❑	
SELECTION AND USE OF WORK PRACTICES			
1. Work practices used to prevent electric shock and other injuries address de-energized parts which may be energized.	❑	❑	
2. Work practices used to prevent electric shock and other injuries address exposure to energized parts.	❑	❑	
3. Procedure provided for work on or near exposed de-energized parts includes:			
a) Written procedures specific to the equipment or worksite.	❑	❑	
b) De-energizing equipment.			
c) Application of locks and tags.			
4. Working on or near exposed energized parts:			

a)	All employees near enough to be exposed to a hazard have been trained, and are aware of the practices that must be followed to protect them from the hazard.	❑	❑	
b)	Only qualified employees work on energized parts.	❑	❑	
c)	Overhead lines de-energized and grounded prior to working near them **or** other protective measures used.	❑	❑	
d)	Unqualified persons working near overhead lines are aware that they may not come approach, or use conductive objects closer than, 10 feet for lines up to 50 kV, or 10 feet plus 4 inches for every 10 kV over 50 kV.	❑	❑	
e)	Qualified persons have a working knowledge of the allowable approach distances of this program.	❑	❑	
f)	Vehicle and mechanical equipment operators understand that they must maintain:			
	i) A clear distance of 10 feet plus 4 inches for every 10 kV over 50 kV while working near energized overhead lines.	❑	❑	
	ii) A clear distance of 4 feet plus 4 inches for every 10 kV over 50 kV while in transit.	❑	❑	

TRAINING ITEM		YES ☑	N/A ☑	COMMENTS
	iii) Insulating barriers are used and installed as required.	❑	❑	
	iv) Insulated aerial lift operated by a qualified person must comply with the separation distances.	❑	❑	
	v) Employees standing on the ground understand they may not contact the vehicle unless using protective equipment rated for the voltage or the equipment located so no un-insulated part can provide a conductive path to persons on the ground.	❑	❑	
g)	Illumination is provided at all worksites to assure safe work.	❑	❑	
h)	Protective shields and barriers provided and used for work in confined spaces to prevent contact with exposed energized parts.	❑	❑	
i)	All conductive materials such as pipes, rods, etc. are handled so as to prevent contact with exposed energized parts.	❑	❑	

j)	Conductive articles of clothing and jewelry such as watches, rings, etc. are not worn if they might contact exposed energized parts unless rendered nonconductive.	❑	❑	
k)	Portable ladders with nonconductive side rails are used when working near or on exposed energized conductors.	❑	❑	
l)	Housekeeping conducted only when exposed energized parts may not be contacted. Barriers provided and nonconductive cleaning materials used.	❑	❑	
m)	Only qualified persons allowed to defeat electrical interlocks on temporary basis while they work on equipment.	❑	❑	
USE OF EQUIPMENT				
1. Portable electric equipment such as cord-and-plug connected equipment, including flexible cords:				
a)	Handled in a manner to avoid damage.	❑	❑	
b)	Not used to raise or lower equipment.	❑	❑	
c)	Not fastened with staples or hung so as to damage insulation.	❑	❑	
d)	Visually inspected before each use on each shift.	❑	❑	
e)	Defective items removed from service and not used until rendered safe.	❑	❑	
f)	Plugs and receptacles mate properly.	❑	❑	
g)	Flexible grounding-type cords have a grounding conductor.	❑	❑	
h)	Grounding plug not defeated.	❑	❑	
i)	Adapters which interrupt grounding continuity not used.	❑	❑	
j)	Approved equipment used for work in conductive work locations (e.g. wet locations, etc.).	❑	❑	
k)	Locking-type connectors are properly secured after connection.	❑	❑	

TRAINING ITEM	YES ☑	N/A ☑	COMMENTS
ELECTRIC POWER AND LIGHTING CIRCUITS			
1. Only load rated switches or circuit breakers used as disconnecting means.	❑	❑	
2. Circuits not manually reenergized until it is determined that it is safe to do so.	❑	❑	
3. Overcurrent protection of circuits not modified.	❑	❑	
TEST INSTRUMENTS AND EQUIPMENT			
1. Used by qualified persons only.	❑	❑	
2. Visually inspected before use.	❑	❑	
3. If circuit tested is over 600 volts, nominal, test instrument tested for proper operation before and immediately after the test.	❑	❑	
4. Test instrument rated for the circuit to be tested and appropriate for the environment.	❑	❑	
5. Electrical equipment capable of igniting flammable or ignitable materials not used if present in the worksite.	❑	❑	
SAFEGUARDS FOR PERSONNEL PROTECTION			
1. Protective equipment used when there is exposure to potential electrical hazards.	❑	❑	
2. Protective equipment maintained in safe and reliable condition and tested and inspected as required.	❑	❑	
3. Protective equipment protected from damage during use.	❑	❑	
4. Approved electrically rated hardhats used as needed to protect head from electric shock or burns.	❑	❑	
5. Safety glasses or goggles used as needed to protect eyes or face when there is a danger of arcs, flashes or flying objects.	❑	❑	
6. Approved gloves worn that are appropriate for the hazard present	❑	❑	
7. Insulated tools or handling equipment used when conductors may be contacted.	❑	❑	
8. Insulated fuse handling equipment used to remove or install fuses when terminals are energized.	❑	❑	

9. Ropes and hand lines used near energized parts are nonconductive and are protected from moisture.	❑	❑	
10. Protective shields, barriers or insulating materials are used to protect employees working near exposed energized parts.	❑	❑	
ALERTING TECHNIQUES			
1. Safety signs and tags used when necessary to warn employees about electrical hazards.	❑	❑	
2. Barricades used with safety signs when necessary to prevent or limit employee access to work areas with un-insulated energized conductors or parts.	❑	❑	
3. Attendants stationed as needed to warn when signs or barricades are not sufficient to prevent unauthorized access.	❑	❑	

Name of Trainer:		Date:
Employee Name	Employee Name	Employee Name

Excavation Safety Program

Purpose

One of the preventable hazards of construction work is the danger of trench cave-ins. Yet every year in the U.S., there are an estimated 75 to 200 deaths and more than 1,000 lost workdays per year from trenching accidents. Other hazards associated with trenches include contact with numerous underground utilities, hazardous atmospheres, water accumulation, and collapse of adjacent structures. For these reasons, we have written Excavation Procedures for both our daily and occasional excavation workers. It is the policy at SDV Construction, Inc. to permit only trained and authorized personnel to create or work in excavations.

Administrative Duties

Our Safety Officer is responsible for developing and maintaining the written Excavation Procedures. These procedures are kept at the following location(s): main office/site office.

Our Excavation Procedures are administered under the direction of our competent person. The following employee(s) is considered a competent person(s) for our company: Superintendents/Foremen. Our competent person inspects excavations daily and during poor weather.

Dangers of Trenching and Excavations

Cave-ins pose the greatest risk and are more likely than in any other excavation related accident. Other potential hazards include fall, falling objects, hazardous atmospheres and incidents involving mobile equipment. For these reasons we have the following requirements on all our jobsites.

General Employee Safety

- Employees exposed to public vehicular traffic must wear warning vests or other suitable garments made of reflective or high-visibility material.
- The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.
- Employees are not permitted under loads that are handled by lifting or digging equipment. Employees are not allowed to work in the excavation above other employees unless the lower level employees are adequately protected.
- While the excavation is open, underground installations are protected, supported, or removed as necessary to safeguard employees. Adjacent structures are supported to prevent possible collapse.
- Employees are not permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Diversion ditches, dikes, or other means are used to prevent surface water from entering an excavation and to provide drainage to the adjacent area.
- A warning system is used to alert operators of heavy equipment and other employees at the work site of the edge of an excavation.
- Adequate protection is provided to protect employees from falling rock, soil, or other materials and equipment. Protection is provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Protective Support Systems

The company protects each employee in an excavation from cave-ins during an excavation by an adequate protective system designed in accordance with OSHA standards. Protective system options include;

- Properly sloping or benching of the sides of the excavations
- Supporting the sides of the excavations with timber shoring, aluminum shoring or hydraulic shoring
- Placing a shield between the side of the excavation and the work area. (Trench box)

SDV Construction, Inc. has the following standard operating procedures regarding protective support systems for excavations, in accordance with safe practices and procedures and OSHA excavation regulations:

- If the excavation is made entirely of stable rock, then no protective system is necessary or used.
- If the excavation is less than 5 feet in depth (provided there is no indication of a potential cave-in), then no protective system is necessary or used.
- If the excavation is less than or equal to 20 feet in depth, then * A competent person chooses the most practical design approach (that meets required performance criteria) for the particular circumstance, and/or
- A registered professional engineer designs all protective systems for use in the excavation.

Sloping

When sloping is used to protect against cave-ins, these options can be chosen for designing sloping systems:

- If a soil classification is not made, then slope the sides of the excavation to an angle not steeper than one and one-half horizontal to one vertical (34 degrees). A slope of this gradation or less is considered safe for any type of soil.
- Use Appendices A and B of 29 CFR 1926, Subpart P to determine the maximum allowable slope and allowable configurations for sloping systems. The soil type must be determined in order to use this option.
- Use other tabulated data approved by a registered professional engineer.
- Have an engineer design and approve the system to be used.

The competent person chooses the best option for sloping for the job at hand.

Benching

When benching is used to protect against cave-ins, these options can be chosen for designing benching systems:

- In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of 3/4H: 1V the support or shield system must extend at least 18 inches above the top of the vertical side.
- In Type B soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1H:1V.

- In Type C soil, all excavations 20 feet or less which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation shall have a maximum allowable slope of 1-1/2 H: 1V.
- When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to Appendix B-1.4 of 29 CFR 1926, Subpart P

The competent person chooses the best option for sloping for the job at hand.

Hazardous Atmospheres

Before an employee enters an excavation greater than 4 feet in depth, the competent person must test the atmosphere where oxygen deficiency or a hazardous atmosphere exists or could reasonably exist (i.e., excavations in landfill areas or excavations in areas where hazardous substances are stored nearby). Emergency rescue equipment is readily available and attended when hazardous atmospheric conditions exist or may develop. Confined space procedures may have to be utilized.

Access and Egress

- Sufficient means for exiting excavations 4 feet deep or more are provided and are within 25 feet of lateral travel for employees.
- Guardrails are provided if there are walkways or bridges crossing over an excavation.

Training

Our Safety Officer will identify all new employees in the employee orientation program and make arrangements with management to schedule training. A designated training organization will conduct initial training and evaluation. This instructor has the necessary knowledge, training, and experience to train excavation workers.

During an excavation worker's initial training, the instructor(s) uses classroom instruction that includes these formats: Lecture, discussion, videotape, practical training.

You may contact our Safety Officer for a current copy of the training material and the course outline.

Training Certification
After an employee has completed the training program, our company keeps records certifying that each excavation worker has successfully completed excavation training. The certificate includes the name of the worker, the date(s) of the training, and the signature of the person who did the training. The Safety Officer is responsible for keeping a copy of all training certification records. Under no circumstances shall an employee create or work in an excavation until he/she has successfully completed this company's excavation training program. This includes all new excavation workers regardless of claimed previous experience.

Fall Protection Safety Program

Purpose

SDV Construction, Inc. is dedicated to the protection of its employees from on-the-job injuries. OSHA currently regulates fall protection for construction under Part 1926, Subpart M. The standards for regulating fall protection systems and procedures are intended to prevent employees from falling off, onto or through working levels and to protect employees from falling objects. Fall protection requirements under the OSHA Construction regulations require considerable planning and preparation.

All employees of SDV Construction, Inc. have the responsibility to work safely on the job. The purpose of this plan is to:

- Supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job.
- Ensure that each employee is trained and made aware of the safety provisions, which are to be implemented by this plan prior to the start of erection.

This program informs interested persons, including employees that SDV Construction, Inc. is complying with OSHA's Fall Protection requirements, (29 CFR 1926.500 to .503). This program applies to all employees who might be exposed to fall hazards, except when designated employees are inspecting, investigating, or assessing workplace conditions before the actual start of construction work or after all construction work has been completed.

Our Duty to Provide Fall Protection

To prevent falls SDV Construction, Inc. has a duty to anticipate the need to work at heights and to plan our work activities accordingly. Careful planning and preparation lay the necessary groundwork for an accident-free jobsite. All fall protection systems selected for each application will be installed before an employee is allowed to go to work in an area that necessitates the protection. All fall protection equipment will meet the requirements of applicable ANSI, ASTM, or OSHA requirements. Our Safety Officer is the program coordinator/manager and is responsible for its implementation. Certain employees are authorized to inspect, investigate, or assess workplace conditions before construction work begins or after all construction work has been completed. These employees are exempt from the fall protection rule during the performance of these duties.

These authorized employees determine if all walking/working surfaces on which our employees work have the strength and structural integrity to support the employees. Our employees will not be allowed to work on these surfaces until they have the requisite strength and structural integrity.

Worksite Assessment and Fall Protection System Selection

This written plan is for Industrial/Commercial. There are situations at this worksite that will require fall protection.

This fall protection plan is intended to anticipate the particular fall hazards to which our employees may be exposed. Specifically, we:

- Inspect the area to determine what hazards exist or may arise during the work.
- Identify the hazards and select the appropriate measures and equipment.
- Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions.
- Ensure employees follow procedures given and understand training provided.
- Apprise us of the steps our specialty subcontractors have taken to meet their fall protection requirements.

Providing fall protection requires an assessment of each fall situation at a given jobsite. Our criteria for selecting a given fall protection system follow those established in 29 CFR 1926.502, fall protection systems criteria and practices. Each employee exposed to these situations must be trained as outlined later in this plan.

Unprotected Sides and Edges

Our employees must be protected when they are exposed to falls from unprotected sides and edges of walking/working surfaces (horizontal and vertical surfaces), which are 6 feet or more above lower levels. We know that OSHA has determined that there is no "safe" distance from an unprotected side or edge that would render fall protection unnecessary.

Each employee who is constructing a leading edge 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

We will maintain the fall protection system(s) chosen until all work has been completed or until the permanent elements of the structure, which will eliminate the exposure to falling hazards, are in place.

Leading Edge Work

Leading edges are defined as the edge of a floor, roof, or formwork that changes location as additional floor, roof, or formwork sections are placed, formed, or constructed. If work stops on a leading edge it will be considered to be an "unprotected side or edge" and will be covered by the section of this plan on unprotected sides and edges.

Each employee who is constructing a leading edge 6 feet or more above lower levels will be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

Employees who are not constructing the leading edge, but who are on walking/working surfaces where leading edges are under construction, are also protected from a fall by the above listed personal fall arrest systems.

Holes

Each employee on walking/working surfaces will be protected from falling through holes (including skylights) more than 6 feet (1.8 m) above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.

Formwork and Reinforcing Steel

Each employee on the face of formwork or reinforcing steel will be protected from falling 6 feet or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

Excavations

Each employee at the edge of an excavation 6 feet or more in depth will be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barriers.

Dangerous Equipment

Each employee less than 6 feet above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards. (Rebar caps)

Each employee 6 feet (1.8 m) or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

Roofing

When performing roofing work on low-slope roofs with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by;

- Guardrail systems, or
- Safety net systems, or
- Personal fall arrest system, or
- A combination of warning line system and guardrail system, or
- A warning line system and safety net system, or
- Warning line system and personal fall arrest system, or
- Warning line system and safety monitoring system.

On roofs 50-feet or less in width, the use of a safety monitoring system alone [i.e. without the warning line system] is permitted.

"Steep roofs." Each employee on a steep roof with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems with toe boards, safety net systems, or personal fall arrest systems. Warning line and safety monitor are not to be used on steep roofs.

SDV Construction, Inc. chooses fall protection based on a hazard assessment and varies from job to job. We believe in 100% fall protection on all jobsite.

Falling object protection

- Toe boards, when used as falling object protection, shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below. Toe boards shall be capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or outward direction at any point along the toe board.
- Materials and equipment shall not be stored within 6 feet (1.8 m) of a roof edge unless guardrails are erected at the edge.
- Canopies, when used as falling object protection, shall be strong enough to prevent collapse and to prevent penetration by any objects which may fall onto the canopy.

Training

All employees that work on SDV Construction, Inc. Projects that utilize any type of fall protection are required to be trained in fall protection. Training must include the following:

- 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 guardrail systems, personal fall arrest systems, safety nets, and warning lines.
- The role of each employee in a safety monitoring system and when it can be utilized.

Our company will verify compliance with training requirements and will maintain written certification records. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer.

Employees Who Need Retraining:

When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving any aspect of our fall protection safety program we will re-train the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the employee has not been previously trained.
- Where changes in the types of fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- Where inadequacies in an affected employee's work involving fall protection indicate that the employee has not retained the requisite proficiency

Fire Prevention Program

Purpose

OSHA's Fire Prevention Plan regulations, found at 29 CFR 1926.24 and Subpart F do not specifically require a written plan, but do require specific program elements. This plan addresses fire emergencies reasonably anticipated to occur through all phases of the construction, repair, alteration, or demolition at our construction sites.

This Fire Prevention Plan (FPP) is in place at this company to control and reduce the possibility of fire and to specify the type of equipment to use in case of fire. This plan addresses the following issues:

- Major workplace fire hazards and their proper handling and storage procedures.
- Potential ignition sources for fires and their control procedures.
- The type of fire protection equipment or systems, which can control a fire involving them.
- Regular job titles of personnel responsible for maintenance of equipment and systems installed to prevent or control ignition of fires and for control of fuel source hazards.

Under this plan, our employees will be informed of the plan's purpose, preferred means of reporting fires and other emergencies, types of evacuations to be used in various emergency situations, and the alarm system.

Our Safety Officer has overall responsibility for this fire protection plan. The written plan is kept in Main Office/Site Office. Safety Officer will review and update the plan as necessary.

If after reading this plan, you find that improvements can be made, please contact the Plan Coordinator. We encourage all suggestions because we are committed to the success of our Fire Prevention Plan. We strive for clear understanding, safe behavior, and involvement in the plan from every level of the company.

Responsibilities

Here at SDV Construction, Inc., the Safety Officer is responsible for the following activities.

He or She must:

1. Maintain a written Fire Prevention Plan for regular and after-hours work conditions.
2. Immediately notify the local fire department or police departments, and the building owner/superintendent in the event of a fire affecting the facility.
3. Integrate the FPP with the existing general emergency plan covering the building occupied.
4. Distribute procedures for reporting a fire, the location of fire exits, and evacuation routes to each employee.
5. Conduct drills to acquaint the employees with fire procedures, and to judge their effectiveness.
6. Satisfy all local fire codes and regulations as specified.
7. Train designated employees in the use of fire extinguishers and the application of medical first-aid techniques.

8. Keep key management personnel home telephone numbers in a safe place in the facility for immediate use in the event of a fire. Distribute a copy of the list to key persons to be retained in their homes for use in communicating a fire occurring during non-work hours.
9. Decide to have employees and non-employees remain in or evacuate the facility in the event of a fire.
10. If evacuation is deemed necessary, the Plan Coordinator ensures that:

    - All employees are notified and evacuated and a head count is taken to confirm total evacuation of all employees.
    - When practical, equipment is placed and locked in storage rooms or desks for protection.
    - The building owner/superintendent is contacted, informed of the action taken, and asked to assist in coordinating security protection.
    - In locations where the building owner/superintendent is not available, security measures to protect employee records and property are arranged as necessary.

Fire Hazards

Fire can be represented by a simple equation: Fire = Ignition Source + Fuel + Oxygen. Without any one of these three elements, a fire cannot start. Likewise, during a fire, if you take away any one of these three elements, you can successfully put out a fire. It is our company's intent to prevent these three elements from reacting to produce a fire.

Fuel is used throughout the facility as an energy source for various systems or equipment. This fuel can be a significant fire hazard and must be monitored and controlled.

Fire Protection Equipment

Fire protection equipment, selected and purchased by the Safety Officer, in use at this company includes the following extinguishers: 2A; ABC

Maintenance of Fire Protection Equipment

Once hazards are evaluated and equipment is installed to control them all equipment must be inspected on a regular basis to make sure it continues to function properly. The foremen are responsible for maintaining equipment and systems installed to prevent or control fires.

Our guidelines for maintaining the equipment is as follows:

- Visual inspection before use
- Monthly documented inspection (Documented on extinguisher tag)
- Annually re-certification. (New inspection tag will be placed at that time)

Fire Prevention

At the time of a fire, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In cases where the fire is large, total and immediate evacuation of all employees is necessary. In smaller fires, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued operation. We must be sure that employees know what is expected of them during a fire to assure their safety.

SDV Construction, Inc. has chosen to train employees through presentation followed by a drill. We cover our Fire Protection Program information at that time.

Training, conducted on initial assignment, includes:

- What to do if employee discovers a fire
- Demonstration of alarm, if more than one type exists
- How to recognize fire exits
- Evacuation routes
- Assisting employees with disabilities
- Measures to contain fire (e.g., closing office doors, windows, etc. in immediate vicinity)
- Head count procedures (see EAP for details)
- Return to building after the "all-clear" signal

If the Plan Coordinator has reason to believe an employee does not have the understanding required, the employee must be retrained. Our Safety Officer certifies in writing that the employee has received and understands the Fire Prevention Plan training. Any employee who does not comply with this plan will be disciplined.

SDV Construction, Inc. has informed its employees of their duties and responsibilities under the plan. Each employer in the facility has a copy of the standardized plan and it is accessible by affected employees.

Fire Protection Equipment (Extinguisher) Training

The Safety Officer coordinates training for each employee who is required to use fire protection equipment. Employees shall not use fire protection equipment without appropriate training. Training, before an individual is assigned responsibility to fight a fire, includes:

- Types of fires
- Types of fire prevention equipment
- Location of fire prevention equipment
- How to use fire prevention equipment
- Limitations of fire prevention equipment
- Proper care and maintenance of assigned fire prevention equipment

Employees must demonstrate an understanding of the training and the ability to use the equipment properly before they are allowed to perform work requiring the use of the equipment. Training will be conducted prior to initial assignment and at least annually thereafter.

If the Safety Officer has reason to believe an employee does not have the understanding or skill required, the employee must be retrained. Our Safety Officer verifies that the employee has received and understands the fire protection equipment training.

First Aid Program

Purpose
SDV Construction, Inc. is dedicated to the protection of its employees from on-the-job injuries and illnesses. However, when injuries or illnesses do occur, we are prepared to immediately respond to the needs of the injured or ill.

This written First Aid Program is intended to ensure that SDV Construction, Inc. meets the requirements of 29 CFR 1926.23, First Aid and Medical Attention, 29 CFR 1926.50, Medical Services and First Aid, and Specification Section 01065 1.10 Medical/Health Protection.

Administrative Duties
Our Safety Officer is our First Aid Program Administrator and is responsible for establishing and implementing the written First Aid Program. This person has full authority to make necessary decisions to ensure the success of this program. Our onsite safety officer will be first aid and CPR trained and also has the responsibility that there are trained CPR and First Aid employees on site.

If after reading this program, you find that improvements can be made, please contact the Safety Officer. We encourage all suggestions because we are committed to the success of this written program.

Hazard and Medical Services Assessment
Our Safety Officer assesses SDV Construction, Inc. for hazards to determine whether any pose the risk of a life-threatening or permanently disabling injury or illness.

When hazards or locations change, our Safety Officer re-assesses our risk and determines whether or not we are required to train an on-site employee in first aid.

First Aid Supplies and Equipment
It is important that our first aid supplies and equipment meet the specific needs of our Workplace.

Our Safety Officer has ensured that adequate first aid supplies are readily available, including: Meets Federal ANSI and FDA specifications, as well as the IH Construction Safety Representative's approval.

We provide these fully stocked first aid kits located Main Office, Shop, and Company Vehicles.
Our Safety Officer and Superintendants will check the first aid kits frequently. First Aid Kit supplies are replaced promptly when expended.

Because it is reasonably anticipated that employees will be exposed to blood or other potentially infectious materials while rendering first aid, we provide the following personal protective equipment:

- Nitrile Gloves
- Face shield
- Biohazard disposal bag

Training

Training is the heart of our First Aid Program. Employees should NOT attempt to rescue or treat an injured or ill employee unless they are qualified to do so. Instead, they should contact someone who is qualified. Employees who are qualified to render first aid have completed SDV Construction Inc.'s first aid training program. Safety Officer is responsible for coordinating CPR and First Aid training. A designated company conducts CPR and First aid training. That training ensures that trainees are knowledgeable in First Aid/CPR.

Training Certification

After an employee has completed our training program, the trainer will determine whether the employee can safely perform first aid. Safety Officer is responsible for keeping records verifying certification of each employee who has successfully completed training. Each certificate is a valid certificate in first-aid training, must be obtained from the U.S. Bureau of Mines, the American Red Cross, National Safety Council, or equivalent training that can be verified by documentary evidence and includes the name of the employee, the date(s) of the training, and the signature of the person who performed the training and evaluation.

Retraining

Trained employees are re-trained every 2 years to keep their knowledge and skills current.

Record keeping

Safety Officer is responsible for maintaining the following records and documentation relating to first aid, injuries, illnesses, and accidents: OSHA 200/300 log

Program Evaluation

By having our Safety Officer thoroughly evaluate and, as necessary, revise our program, we ensure our program's effectiveness and prevent or eliminate any problems. Program evaluation is performed annually.

Gases, Vapors, Fumes, Dusts, and Mists Safety Program

Purpose

The purpose of this program is to inform interested persons, including employees, that SDV is complying with OSHA's Gases, Vapors, Fumes, Dusts, and Mists standard, Title 29 Code of Federal Regulations 1926.55 and other OSHA rules as needed to ensure that no employee is exposed to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists found in Appendix A of 29 CFR 1926.55.

To achieve compliance we must first implement all feasible administrative and engineering controls. However, when such controls are not feasible, we will use protective equipment or other protective measures to keep the exposure of employees to air contaminants within the limits prescribed in Appendix A of 29 CFR 1926.55. All equipment and technical measures used to achieve compliance will first be approved for each particular use by a competent industrial hygienist or other technically qualified person.

This program applies to all work (including alteration, repair, painting, and decorating) where one of our employees may be occupationally exposed to gases, vapors, fumes, dusts, and mists at concentrations above those specified in Appendix A of 29 CFR 1926.55. For SDV, these gases, vapors, fumes, dusts, and mists will be identified as jobsite specific hazards.

Administrative Duties

This written safety program is for the work site. Our Safety Officer is the program coordinator/manager and is responsible for its implementation. Copies of the written program may be obtained at the corporate office.

Recordkeeping

We know recordkeeping is critical for our gases, vapors, fumes, dusts, and mists operations. Our recordkeeping tasks, at a minimum, include:

- Material Safety Data Sheets
- Training regard hazard awareness
- Recorded analytical data provided via JSHE

Training and information

We will provide our workers with training that includes:

- Hazard Communication
- Hazard Recognition
- PPE
- CSSP review

Methods of compliance

This section contains our description of the specific means that we will employ to achieve compliance with the requirements of 29 CFR 1926.27, .51, .55, .95, .100 - .105, and .200. Methods of compliance will be evaluated for the appropriate level of protection prior to selection.

Administrative procedures, engineering controls, and good work practices

Exposures to gases, vapors, fumes, dusts, and mists can be controlled through the use of engineering controls and work practices. Engineering controls are hazard controls designed into equipment and workplaces. Work practices are procedures followed by employers and workers to control hazards. Some of the engineering controls and work practices we may use during work that generate gases, vapors, fumes, dust, and mists are:

- Alternative products
- Wet methods
- Ventilation
- Use of respiratory protection (see Respiratory Protection Plan)

Protective clothing

We will take the following steps to assure that gas, vapor, fume, dust, and mist work clothing do not contaminate cars, homes, or work sites outside the dusty area:

- Disposable clothing on top of standard PPE (e.g., Tyvek).
- Coordination with Superintendent of proper disposal of potentially contaminated clothing.
- Protective Clothing that is contaminated will be contained while being transported.

Respirators and the respiratory protection program

We know the OSHA regulation requires us to implement a respirator program when engineering, administrative, and good work practices are not enough to keep gases, vapors, fumes, dusts, and mists below their permissible exposure limit (PEL) as found in 29 CFR 1926.55.

We will not use respirators as the primary means of preventing or minimizing exposures to airborne contaminants. Instead, we will use effective source controls such as:

- Substitution,
- Automation,
- Enclosed systems,
- Local exhaust ventilation,
- Wet methods, and
- Good work practices.

Such measures will be the primary means of protecting our workers. However, when source controls cannot keep exposures below the PEL, controls will be supplemented with the use of respirators.

Our Respirator Program is attached to this written program and follows the requirements of 29 CFR 1926.103.

Communication of Hazards

We will post warning signs to mark the boundaries of work areas contaminated with gases, vapors, fumes, dusts, and/or mists at or above their PEL's as well as inform employees utilizing the CSSP when required. SDV will only allow properly trained personnel to work in areas where the potential of exposure exists. All training will be verified prior to the start of any work.

Ground Fault Circuit Interrupter Program

Purpose

OSHA's Ground Fault Circuit Interrupters rules and regulation will be followed by SDV Construction, Inc by providing (a) ground fault circuit interrupters on construction sites for receptacle outlets in use and not part of the permanent wiring of the building or structure. Our safety officer is our competent person and is responsible for implementing and enforcing our Ground Fault Circuit Interrupter Program.

Inspections

Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indications of possible internal damage. Equipment found damaged or defective shall not be used until repaired.

Testing

Tests are performed as required by OSHA are to be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means and shall be maintained until replaced by a more current record. The record shall be documented and made available on the jobsite.

Training

Training is provided to ensure that employees are familiar with the requirements of this plan. This training is provided to employees annually.
Our Safety Officer is responsible for conducting training or designating an outside training agency to conduct the training.

Hand and Power Tool Safety Program

Purpose

The purpose of this Hand and Power Tool Program is to ensure that employees of SDV Construction, Inc., and subcontractors are properly protected against all occupational exposures to hand and power tools, in al forms in all construction work where an employee may be potentially exposed.

General Safety Precautions

Employees who use hand and power tools and who are exposed to the hazards of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases will be provided with the appropriate equipment needed, including Personal Protective Equipment, to protect them from the hazard. PPE includes:

- Hard hats
- Safety glasses
- Gloves

All hazards involved in the use of power tools can be prevented by following some basic safety rules:

- Keep all tools in good condition with regular maintenance;
- Use the right tool for the job;
- Inspect each tool for damage before use. If tool if found to be unsafe by tags need to be placed render the tools inoperable.
- Operate according to the manufacturer's instructions;
- Utilize the proper protective equipment.
- Participating in safety training. ****Employees shall not operate any tool unless properly trained in the hazards associated with the tool!***

SDV Construction, Inc. believes that us and our employees have a responsibility to work together to establish safe working procedures. SDV Construction, Inc. believes all hand and power tools shall be maintained in a safe condition. If a hazardous situation is encountered, it shall be brought to the attention of the Supervisor and/or Safety Officer for evaluation and corrective action.

Hand Tools

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.
Some examples of misuse include the following:

- Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees;
- Using a tool with a wooden handle (e.g., hammer) if the handle is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker;
- Using a wrench if its jaws are sprung, because it might slip; and
- Using impact tools (e.g., chisels, wedges) if they have mushroomed heads since the heads might shatter on impact, sending sharp fragments flying.

Hand tool precautions including the following:

- Employers shall caution employees that saw blades, knives or other tools be directed away from aisle areas and other employees working in close proximity. Knives and scissors shall be sharp. Dull tools can be more hazardous than sharp ones;
- Floors shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools; and
- Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum or wood shall be used.

Power Tools

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic and powder-actuated.

The following general precautions shall be observed by power tool users:

- Never carry a tool by the cord or hose;
- Never remove prongs from any cords;
- Never stand in or near water when using tools;
- Always use a Ground Fault Circuit Interrupters (GFCI) with electrical tools if working in a wet environment;
- Never "yank" the cord or the hose to disconnect it from the receptacle;
- Keep cords and hoses away from heat, oil and sharp edges;
- Replace all frayed and/or damaged extension cords. Do not try to tape cords;
- Disconnect tools when not in use, before servicing and when changing accessories such as blades, bits and cutters;
- All observers shall be kept at a safe distance away from the work area;
- Secure work with clamps or a vise, freeing both hands to operate the tool;
- Avoid accidental starting. The worker shall not hold a finger on the switch button while carrying a plugged-in tool;
- Tools shall be maintained with care. They shall be kept sharp and clean for the best performance. Follow instructions in the user's manual for maintenance, lubricating and changing accessories;
- Maintain good footing and balance;
- Avoid loose fitting clothes, ties or jewelry such as bracelets, watches or rings, which can become caught in moving parts;
- Use tools that are either double-insulated or grounded (three-pronged);
- Keep work area well lighted when operating electric tools;
- Ensure that cords and hoses do not pose as a tripping hazard; and
- All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use". This shall be done by supervisors and/or employees.

Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed to contact by employees.
Guards, as necessary, shall be provided to protect the operator and others from the following:

- Point of operation
- Nip points
- Rotating parts
- Flying chips
- Sparks

Safety guards shall never be removed when a tool is being used.

Safety Switches

The following hand-held power tools shall be equipped with a momentary contact "on-off" control switch: drills, tappers, fastener drivers, horizontal, vertical and angle grinders with wheels larger than two inches in diameter, disc and belt sanders, reciprocating saws, saber saws and other similar tools. These tools also may be equipped with a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

The following hand-held powered tools may be equipped with only a positive "on-off" control switch: platen sanders, disc sanders with discs two inches or less in diameter; grinders with wheels two inches or less in diameter; routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks quarter inch wide or less.

Other hand-held powered tools such as circular saws having a blade diameter greater than two inches, chain saws and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

Electric Tools

Employees using electric tools shall be aware of several dangers with the most serious being the possibility of electrocution.

Among the chief hazards of electric-powered tools are burns and slight shocks which can lead to injuries or even heart failure.

To protect the user from shock, tools shall either have a three-wire cord with ground and be grounded or be double insulated or be powered by a low-voltage isolation transformer.

These general practices shall be followed when using electric tools:

- Electric tools shall be operated within their design limitations;
- Gloves, eye protection, and safety footwear are recommended during use of electric tools;
- When not in use, tools shall be stored in a dry place;
- Electric tools shall not be used in damp or wet locations; and
- Work areas shall be well lit, even if this means the operators has to augment the work surface illumination by other appropriate means.

Powered Abrasive Wheel Tools

Powered abrasive grinding, cutting, polishing and wire buffing wheels create special safety problems because they may throw off flying fragments or excessive dust.

Before an abrasive wheel is mounted, it shall be inspected closely and sound- or ring-tested to ensure that it is free from cracks or defects. To test, wheels shall be tapped gently with a light non-metallic instrument. If the wheel sounds cracked or dead, they could fly apart in operation and shall not be used. A sound and undamaged wheel will give a clear metallic tone or "ring." To prevent the wheel from cracking, the user shall be sure it fits freely on the spindle. The spindle nut shall be tightened enough to hold the wheel in place, without distorting the flange. Follow the manufacturer's recommendations. Care shall be taken to ensure that the spindle wheel does not exceed the abrasive wheel specifications.

Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee shall never stand directly in front of the wheel as it accelerates to full operating speed.

Portable grinding tools need to be equipped with safety guards to protect workers not only from the moving wheel surface, but also from flying fragments in case of breakage.

In addition, when using a power grinder:

- Always use eye protection and a dust mask;
- Turn off the power when not in use; and
- Never clamp a hand-held grinder in a vise.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders. There are several dangers encountered in the use of pneumatic tools. The main one is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

Eye protection is required and face protection is recommended for employees working with pneumatic tools. When sanders are used, dust masks shall also be worn.

Noise is another hazard. Working with noisy tools (e.g. jackhammers) requires proper, effective use of hearing protection.

When using pneumatic tools, employees shall ensure they are fastened securely to the hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard.

A safety clip or retainer shall be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.

Screens shall be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers or air drills.

Compressed air guns shall never be pointed toward anyone. Users shall never "dead-end" it against themselves or anyone else. It is recommended to use air guns equipped with safety tips that have relief ports to reduce pressure if blockage or dead-ending occurs.

Powder-Actuated Tools

Powder-actuated tools operate like a loaded gun and shall be treated with the same respect and precautions.

Safety precautions to remember include the following:

- These tools shall not be used in an explosive or flammable atmosphere;
- Before using the tool, the worker shall inspect it to determine that it is clean, all moving parts operate freely, and the barrel is free from obstructions;
- Employees shall not modify tools;
- The tool shall never be pointed at anybody;
- The tool shall not be loaded unless it is to be used immediately. A loaded tool shall not be left unattended, especially where it could be available to unauthorized persons;
- Hands shall be kept clear of the barrel end;
- To prevent the tool from firing accidentally, two separate motions are required for firing: one to bring the tool into position and another to pull the trigger;
- The tools shall not be able to operate until they are pressed against the work surface with a force of at least five pounds greater than the total weight of the tool;
- If a powder-actuated tool misfires, the employee shall wait at least 30 seconds, then try firing it again;
- If it still will not fire, the user shall wait another 30 seconds so that the faulty cartridge is less likely to explode then carefully remove the load. The bad cartridge shall be put in water;
- Suitable eye and face protection are essential when using a powder-actuated tool;
- The muzzle end of the tool shall have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles that might otherwise create a hazard when the tool is fired. The tool shall be designed so that it will not fire unless it has this kind of safety device;
- All powder-actuated tools shall be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force; and
- If the tool develops a defect during use, it shall be tagged and taken out of service immediately until it is properly repaired.

Hydraulic Power Tools

The fluid used in hydraulic power tools shall be an approved fire-resistant fluid and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed.

The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters and other fittings shall not be exceeded.

Hazard Communication Program

Purpose

It is SDV Construction, Inc. purpose to comply with the requirements of OSHA's Hazard Communication Standard for construction by compiling a list of hazardous chemicals, using Material Safety Data Sheets (MSDS), ensuring that containers are labeled, and training our workers present at a given construction site. In addition, we provide this same information to subcontractors involved in a specific project so that they may provide this information and train their employees.
This Written Hazard Communication program applies to all work operations in our company where employees may be exposed to hazardous substances under normal working conditions or during an emergency situation.

General Requirements

Our Safety Officer is the program coordinator and has overall responsibility for the program and will review and update the program, as necessary. Copies of the written program may be obtained from Superintendent in the jobsite trailer or at the main office.
All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard, applicable MSDS's, and chemical information lists from the Superintendent or the jobsite trailer or main office. Under this program, our employees will be informed of the contents of the Hazard Communication Standard, the hazardous properties of chemicals with which they work, safe handling procedures, and measures to take to protect themselves from these chemicals. Our employees will also be informed of the hazards associated with non-routine tasks, and the hazards associated with hazardous chemicals through toolbox talks and safety meetings.

If after reading this program, if you find that improvements can be made, please contact our Safety Officer. We encourage all suggestions because we are committed to the success of our written hazard communication program. We strive for clear understanding, safe behavior, and involvement in the program from every level of the company.

List of Hazardous Chemicals

Our chemical inventory is a list of hazardous chemicals known to be present in our workplace.
Anyone who comes into contact with the hazardous chemicals on the list needs to know what those chemicals are and how to protect themselves.

That is why it is so important that hazardous chemicals are identified, whether they are found in a container or generated in work operations (for example, welding fumes, dusts, and exhaust fumes). The hazardous chemicals on the list can cover a variety of physical forms including liquids, solids, gases, vapors, fumes, and mists. Sometimes hazardous chemicals can be identified using purchase orders. Identification of others requires an actual inventory of the facility. Each time a new hazardous chemical is introduced to the company whether at the jobsite or main office, that chemical must be accompanied by a MSDS and be presented to the Safety Officer for approval and filing. Our Safety Officer updates the inventory as necessary.

Our Safety Officer keeps the chemical inventory list, along with related work practices used in our facility and is located in the jobsite trailer and main office where it is accessible during work hours.

The company does not manufacture any chemicals and, therefore, does not make any hazard determinations.

After the chemical inventory is compiled, it serves as a list of every chemical for which an MSDS must be maintained.

Material Safety Data Sheets (MSDSs)
The MSDSs we use are fact sheets for chemicals that pose a physical or health hazard in the workplace. MSDSs provide our employees with specific information on the chemicals they use.

Our Safety Officer/Superintendent is responsible for obtaining/maintaining the MSDSs at our facility. He/she will contact the chemical manufacturer or vendor if additional research is necessary.

The material safety data sheets are kept at the jobsite trailer and in the main office.

The procedure followed if the MSDS is not received at time of first shipment is: The supplier and/or manufacturer of the product will be notified and a copy will be requested immediately and prior to use of the hazardous chemical.

We do not generate MSDSs.

No alternatives to MSDSs are used in this workplace.

Labels and Other Forms of Warning
Labels list at least the chemical identity, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party.

The chemical identity is found on the label, the MSDS, and the chemical inventory. Therefore, the chemical identity links these three sources of information. The chemical identity used by the supplier may be a common or trade name, or a chemical name. The hazard warning is a brief statement of the hazardous effects of the chemical (i.e., "flammable," or "causes lung damage"). Labels frequently contain other information, such as precautionary measures (i.e., "do not use near open flame"), but this information is provided voluntarily by our company and is not required by the rule. Our labels are legible and prominently displayed, though their sizes and colors can vary.

Our Superintendents/Foremen and Safety Officer are responsible for ensuring that all hazardous chemicals in in-plant containers are properly labeled and updated, as necessary. Our Superintendents/Safety Officer also ensures that newly purchased materials are checked for labels prior to use.

Our Superintendents/Foremen and Safety Officer is responsible for ensuring the proper labeling of any shipped containers.

Our Superintendents/Safety Officer will refer to the corresponding MSDS to assist employees in verifying label information.

The labeling system used on in-plant and shipped containers are: Labels on incoming container of hazardous chemicals shall not be removed or defaced, unless, the container is immediately marked with the required information. The Superintendent will instruct employees when this is necessary.

Each container of hazardous chemicals on the jobsite must be labeled, tagged, or marked, with the following information:

- The identity of the hazardous chemical(s) contained therein; and
- Appropriate hazard warnings. Since such information is supplied on the Material Safety Data Sheet, also, it shall be made available to the employee upon request.
- Labels shall be legible, and in English.

If employees transfer chemicals from a labeled container to a portable container that is intended only for their IMMEDIATE use, no labels are required on the portable container.

An alternative to labeling of containers for chemicals is to use the following method(s):

> Signs, placards, process sheets, batch tickets, or operating procedures, or other such written materials, as long as the alternative method identifies the containers to which it is applicable. The written materials shall be readily accessible to the employees in their work area.

Training

Everyone who works with or is potentially "exposed" to hazardous chemicals will receive initial training and any necessary retraining on the Hazard Communication Standard and the safe use of those hazardous chemicals by our Safety Officer.

"Exposure" means "an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure." Whenever a new hazard is introduced or an old hazard changes, additional training is provided.

Information and training is a critical part of the hazard communication program.
We train our employees to read and understand the information on labels and MSDSs, determine how the information can be obtained and used in their own work areas, and understand the risks of exposure to the chemicals in their work areas as well as the ways to protect themselves.

Our goal is to ensure employee comprehension and understanding including being aware that they are exposed to hazardous chemicals, knowing how to read and use labels and MSDSs, and appropriately following the protective measures we have established. We ask our employees to ask our Safety Officer/Superintendent questions. As part of the assessment of the training program, our Safety Officer asks for input from employees regarding the training they have received, and their suggestions for improving it. In this way, we hope to reduce any incidence of chemical source illnesses and injuries.

All employees receive training for hazard communication.

Training Content

The training plan emphasizes these elements:

- Reviewing and understanding all sections of the material safety data sheets including
  - Chemical Manufacturer responsibilities to develop and distribute the MSDS to employers who purchase those chemicals and that all information must be presented in English regardless of the chemicals origin.
  - Chemical identity and whether it is a single substance or mixture.
  - Chemical's common name and health or physical hazards associated with the chemical or any of its contents.
  - Physical and chemical characteristics of the chemical (i.e., flashpoint, vapor pressure) and potential for fire, explosion and reactivity.
  - Health hazards of the chemical including signs of exposure, chemical intoxication, long term effects and short term effects.
  - Primary routes of entry, PEL's, ACGIH TLV's, listings on the NTP annual report of Carcinogens or finding of potential carcinogens IARC monograph or by OSHA.
  - Applicable precautions for safe handling including hygienic practices and protective measures.
  - Emergency and first aid procedures
  - Date of data preparation
  - Manufacturer contact information.
- Summary of the standard and this written program, including what hazardous chemicals are present, the labeling system used, and access to MSDS information and what it means.
- Chemical and physical properties of hazardous materials (e.g., flash point, reactivity) and methods that can be used to detect the presence or release of chemicals (including chemicals in unlabeled pipes).
- Physical hazards of chemicals (e.g., potential for fire, explosion, etc.).
- Health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical.
- Procedures to protect against hazards (e.g., engineering controls; work practices or methods to assure proper use and handling of chemicals; personal protective equipment required, and its proper use, and maintenance; and procedures for reporting chemical emergencies).

The procedure to train new employees at the time of their initial assignment is to present this information at the new hire orientation. We train employees when a new hazard is introduced by re-presenting the information to all affected employees at that time. Proof of training for each employee is documented and kept at the main office.

When employees are required to perform non-routine tasks that have the potential to expose workers to hazardous chemicals, we inform employees of these hazards. At this time, the work task will be addressed with the Superintendent.

Multi-Employer Facility

When contractors or any other employers' workers (i.e., painters, electricians, or plumbers) will be working at this workplace, the Safety Officer will:

- Provide the other employer(s) with MSDSs for any of our chemicals to which their employees may be exposed, and
- Relay necessary label and/or emergency precautionary information to the other employer(s)

Each contractor bringing chemicals on-site must provide with the appropriate hazard information on these substances, including the MSDSs, the labels used and the precautionary measures to be taken in working with these chemicals.

Additional Information

All employees, or their designated representatives, can obtain further information on this written program, the hazard communication standard, applicable MSDSs, and chemical information lists from the jobsite Superintendent or at the main office.

Hearing Conservation Program

Purpose

This written Hearing Conservation Program Safety describes methods and practices this company has instituted for our construction workers to prevent any temporary or permanent noise-induced hearing loss to employees. SDV Construction intends to comply with the federal OSHA standards found at 29 CFR 1910.95 and the American Conference of Governmental Industrial Hygienists (ACGIH) most recent publication of Threshold Limit Values. (TLV's) Our Safety Officer or designated safety representative has overall responsibility for coordinating safety and health programs in this company. Our Company will review and update the program, as necessary.

In the rare event that there is high noise levels and employees may be exposed to excessive noise SDV Construction will notify all employees exposed at or above an 8-hour time-weighted average of 85 decibels of the results. We will provide an opportunity for affected employees or their representatives to observe any noise measurements conducted.

Audiometric Testing Program

SDV does not anticipate performing tasks that will over expose employees to high noise levels. This plan and training are strictly precautionary and in some cases a requirement under designated contracts.

Through our hazard assessments we will select proper hearing devices for all potentially affected employees. Monitoring is repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that either additional employee may be exposed at or above the action level or the attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of noise reduction. The audiometric testing program is in place and available at no cost to all affected employees to ensure that noise exposures are kept at proper levels. Within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared.

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified.

A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician. We will provide for an annual audiogram and if a standard threshold shift has occurred the employee will be notified in writing within 21 days of determination.

Hearing Protection

The company makes hearing protectors (ear plugs) available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees.

The company ensures that employees have a variety of suitable protectors that attenuate (lower) employee exposure at least to an 8-hour time-weighted average of 85 decibels or lower for employees who have experienced a standard threshold shift in their hearing.

The company ensures evaluation for adequacy of the hearing protection attenuation for the specific noise environments in which the protector will be used, according to specifications given in an appendix to the standard. The company reevaluates attenuation whenever employee noise exposures increase to the extent that current hearing protectors no longer provide adequate attenuation, and then provides more effective hearing protection.

Training and Information

SDV Construction, Inc. has a hearing protection-training program for all employees exposed to noise at or above an 8-hour time-weighted average of 85 decibels.

The company ensures all employees participate in the hearing protection-training program. Copies of the OSHA standard requirements are available to affected employees or their representatives. Our company assures that the training material is updated to be consistent with changes in the protective equipment and work processes.

The company assures that each affected employee is informed of at least the following information:

- The effects of noise on hearing;
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and
- The purpose of audiometric testing, and an explanation of test procedures.

Recordkeeping

SDV Construction, Inc. maintains accurate records of employee's exposure measurements for two years. Records area available on request from the main office. All Audiometric records are also kept. Audiometric records include

- Name and job classification of the employee.
- Date of the audiogram
- Examiners name
- Date of last acoustic or exhaustive calibration of the audio meter
- Employee's most recent noise exposure assessment.

Hoisting & Rigging Safety Program

Purpose

The ability to safely move materials from one location to another is a vital part of many activities here at SDV Construction, Inc. Hoisting and Rigging operations are often used when materials are too heavy or bulky to be safely moved manually. Because hoists rely upon slings to hold their suspended loads, slings are the most commonly used materials-handling apparatus. Because of the complex nature of the seemingly simple task of lifting an object, an effective hoisting and rigging safety program is necessary. The Occupational Safety and Health Administration (OSHA) requirements for hoisting and rigging safety are described in this section and apply to all jobsites where hoisting techniques are used.

Program Requirements

Overhead Loads

No employees are allowed to be under overhead loads. Proper barricading must be in place to reduce overhead hazards for employees and the public.

Selection, Use and Inspection of Slings

Workers involved in hoisting and rigging must exercise care when selecting and using slings. The selection of slings should be based upon the size and type of the load, and the environmental conditions of the workplace. All rigging equipment for material handling shall be inspected prior to use and on each shift and as necessary during its use to ensure that it is safe. If any defects in material or rigging equipment is found it shall be taken out of service immediately. Improper use of hoisting equipment, including slings, may result in overloading, excessive speed (e.g., taking up slack with a sudden jerk, shock loading), or sudden acceleration or deceleration of equipment. Rigging equipment shall not be loaded in excess of its recommended safe working load.

There are generally six types of slings:

- Chain
- Wire rope,
- Metal mesh
- Natural fiber rope
- Synthetic fiber rope
- Synthetic web

Each type of sling has its own particular advantages and disadvantages. Factors to consider when choosing the best sling for the job include size, weight, shape, temperature, and sensitivity of the material being moved, and the environmental conditions under which the sling will be used.

Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

Latches will be in place on all hooks! The following guide may be useful in selecting the appropriate sling:

Chains

Alloy steel chains are strong and able to adapt to the shape of the load. Care should be taken when using chain slings because sudden shocks will damage them. This may result in sling failure and possible injury to workers or damage to the load.

Chain slings must be visually inspected prior to use. During the inspection, employees should pay particular attention to any stretching, nicks, gouges, and wear in excess of the allowances made by the manufacturer. These signs indicate that the sling may be unsafe and must be removed from service immediately.

Wire Rope

Wire rope is composed of individual wires that have been twisted to form strands. Strands are then twisted to form a wire rope. When wire rope has a fiber core, it is usually more flexible but less resistant to environmental damage. Conversely, wire rope with a core that is made of a wire rope strand tends to have greater strength and is more resistant to heat damage.

When selecting a wire rope sling to give the best service, there are four characteristics to consider:

- Strength – Strength of wire rope is a function of its size (e.g., diameter of the rope), grade, and construction, and must be sufficient to accommodate the maximum applied load.
- Fatigue (Bending without Failure) – Fatigue failure of wire rope is caused by the development of small cracks during small radius bends. The best means for preventing fatigue failure of wire rope slings is to use blocking or padding to increase the bend radius.
- Abrasive Wear – The ability of wire rope to withstand abrasion is determined by the size and number of the individual wires used to make up the rope. Smaller wires bend more readily and offer greater flexibility, but are less able to withstand abrasion. Larger wires are less flexible, but withstand abrasion better.
- Abuse – Misuse or abuse of wire rope slings will result in their failure long before any other factor. Abuse can lead to serious structural damage, resulting in kinks or bird caging.
- (In bird caging, the wire rope strands are forcibly untwisted and become spread outwards.) To prevent injuries to workers and prolong the life of the sling, strictly adhered to safe and proper use of wire rope slings.

Wire rope slings must be visually inspected before use. Slings with excessive broken wires, severe corrosion, localized wear, damage to end-fittings (e.g., hooks, rings, links, or collars), or damage to the rope structure (e.g., kinks, bird caging, distortion) must be removed from service and discarded.

Fiber Rope and Synthetic Web

Fiber rope and synthetic web slings are used primarily for, highly finished or fragile parts, and delicate equipment. Fiber rope slings deteriorate on contact with acids and caustics and, therefore, must not be used around these substances. Fiber rope slings that exhibit cuts, gouges, worn surface areas, brittle or discolored fibers, melting, or charring must be discarded. A buildup of powder-like sawdust on the inside of a fiber rope indicates excessive internal wear and that the sling is unsafe. Finally, if the rope fibers separate easily when scratched with a fingernail, it indicates that the sling has suffered some kind of chemical damage and should be discarded.

Synthetic web slings must be inspected before use and should be removed from service if found to have acid or caustic burns, melting or charring of any part of the surface, snags, tears, or cuts, broken stitches, distorted fittings, or wear or elongation beyond the manufacturer's specifications.

All rigging equipment, when not in use, shall be removed from the immediate work area to reduce possibilities of trips, slips and falls.

Training

Workers involved in hoisting and rigging operations should receive training in the following:

- Sling and hitch types
- Sling capacity determination
- Equipment inspection, care, and maintenance
- Load weight and center of gravity determination
- Safe lifting techniques

Crane Safety

Mobile Cranes

Prior to start of hoisting and rigging using a mobile crane, notify Superintendent or Safety Officer forty-eight hours in advance of scheduled arrival time. This notification allows time to review the project documentation, and to conduct an inspection of the crane coming onto project site. Crane inspection by the Safety Officer shall include, but not be limited to verification of license or training, load charts, inspection reports, and physical verification of ropes, slings, undercarriage, outriggers, and boom.

Additionally, Safety Officer shall document review of crane placement, and lifting plan or sequence with the Contractor and Contractor's crane operator.

Proof of inspection and load tests in accordance with 29 CFR 1926 and ANSI B30.5 must be available upon request.

Crane operators shall be properly trained and experienced in operation of crane or hoisting device. Crane operator shall have one of the following in possession during crane inspection and operation: Valid State of New Mexico Crane Operator's License or Certification that indicates completion of an industry-recognized, in-house training course based on American National Standards Institute (ANSI) standards for hoisting operators, and who is employed by the entity that taught the training course or contracted to have the training course taught.

Documented Lift Plan

All lift meeting the criteria described below will be documented. Documentation will be onsite during the lifting operation and shall be available for review. A documented lift plan will be required for all lifts meeting the following criteria:

- Greater than 75% of manufacturer's load chart capacity.
- Lifts involving field designed and installed lifting points when manufacturer's lift points cannot be utilized.
- Tag lines shall be used on all lifts unless their use creates an unsafe condition.

Lift plan shall include: lift calculations, qualified person in charge (PIC), and method utilized to approve filed designed lifting points when manufacturer's lifting points cannot be utilized.

Critical Lift Plan

A lift shall be designated as a critical lift if collision, upset, or dropping could result in any one of the following:

- Unacceptable risk of personnel injury or significant adverse health impact (onsite or offsite).
- Significant release of radioactive or other hazardous material or other undesirable conditions.
- Undetectable damage that would jeopardize future operations or the safety of a facility.
- Damage that would result in unacceptable delay to schedule or other significant program impact such as loss of vital data.

A lift should also be designated as critical if the load requires exceptional care in handling because of size, weight, close-tolerance installation, high susceptibility to damage, or other unusual factors.

Housekeeping Program

Purpose

Good housekeeping is a necessary requirement for maintaining safety at construction sites. Clean and tidy work sites hold fewer hazards for all employees. Accidents and injuries are avoided and productivity improved where good housekeeping is a daily occurrence. This document informs interested persons, including employees that our company is complying with OSHA's housekeeping requirements, including:

- 29 CFR 1926.25 - Housekeeping, and
- 29 CFR 1926.151 - Fire Prevention.

Many other regulations also lead to housekeeping procedures. Common sense and safety concerns encourage standardization of housekeeping measures in the workplace. SDV Construction, Inc. has developed a set of written housekeeping procedures. In this way we have standardized housekeeping measures and are providing clear expectations and procedures for housekeeping at our company.

Good housekeeping is possibly the most visible evidence of management and employee concern for safety and health that a company displays on a day-to-day basis. Orderliness in our workplace contributes to a safe working environment by minimizing obstacles and potential safety and health threats such as spills, trip hazards, etc. In fact, we have nine good reasons for housekeeping:

- Prevents accidents
- Prevents fire
- Saves time
- Gives control to our workers
- Increases production
- Gives our workers the freedom to move
- Gives our workers pride
- Protects our products and equipment
- Reduces our waste.

Our Written Housekeeping Program begins with a purpose statement. Then it provides a section to explain our expectations for a walk-around assessment. We have also included specific housekeeping procedures. Because no program can be successful without employee participation, we train our employees in the procedures. Plus, we have a system to promptly address and resolve any housekeeping-related accidents and hazard reports.

Administrative Duties

Our Safety Officer is responsible for developing and maintaining the program. Employees may review a copy of the plan. It is located in main office. If after reading this program, you find that improvements can be made, please contact the Safety Officer. We encourage all suggestions because we are committed to the success of our written housekeeping program.
We strive for clear understanding, safe behavior, and involvement from every level of the company.

Walk-Around Assessment

Our Safety Officer walks around the facility weekly for an assessment to identify main housekeeping issues, which are documented on the assessment form. These persons look for a lack of order, un-removed spills or obstructions, or other hazards due to poor organization or poor housekeeping. They ask employees working in each area to identify and recommend corrective actions for their area. They also walk around the grounds to see if there is refuse or an untidy appearance due to storing materials haphazardly. In addition, they check the OSHA Form 300 injury and illness records. To see if one or more incidents such as slips, trips, falls, or other types of accidents were related in some way to poor housekeeping.

Housekeeping Procedures

It is the intent of this company to standardize housekeeping measures, meet OSHA requirements, and encourage safety. The procedures listed below cover many locations in our facility.

Our facility controls any vegetation problems outside the facility in the following manner:

- Cutting and removal of vegetation

Our facility securely stores material by piling or arranging it in an orderly manner. Our housekeeping procedures for storage areas, which keep them free from accumulation of materials that, constitute hazards from tripping, fire, explosion, or pest harborage.

Open yard storage housekeeping procedures include:

- Combustible materials must be piled with due regard to the stability of piles and in no case higher than 20 feet.
- Driveways between and around combustible storage piles must be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other articles or materials. Driveways must be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced.
- The entire storage site must be kept free from accumulation of unnecessary combustible materials. Weeds and grass must be kept down and a regular procedure provided for the periodic cleanup of the entire area.
- When there is a danger of an underground fire, that land must not be used for combustible or flammable storage.
- Method of piling must be solid wherever possible and in orderly and regular piles. No combustible material may be stored outdoors within 10 feet of a building or structure.

Indoor Storage Housekeeping Measures:

- Storage may not obstruct, or adversely affect, means of exit.
- All materials must be stored, handled, and piled with due regard to their fire characteristics.
- A barrier having a fire resistance of at least 1 hour must segregate non-compatible materials, which may create a fire hazard.
- Material must be piled to minimize the spread of fire internally and to permit convenient access for firefighting. Stable piling shall be maintained at all times. Aisle space shall be maintained to safely accommodate the widest vehicle that may be used within the building for firefighting purposes.

- Clearance of at least 36 inches must be maintained between the top level of the stored material and the sprinkler deflectors.
- Clearance must be maintained around lights and heating units to prevent ignition of combustible materials.
- A clearance of 24 inches must be maintained around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Material must not be stored within 36 inches of a fire door opening.

Chemical Storage

Because we have chemicals at our facility, we have attached our Written Hazard Communication Program to this Written Housekeeping Program.

Note: Flammable and combustible substance storage is not allowed in office areas UNLESS it is required for maintenance and operation of building and operation of equipment.

Our housekeeping for Aisles, Walkways, and Floors

Our facility does the following things to keep aisles, walkways and floors clean and open:

- Provide sufficient safe clearances and access to any and all work stations and work areas, fire aisles, fire extinguishers, fire blankets, electrical disconnects, safety showers, other emergency aids, doors, and access to stairways.
- Clearly mark to distinguish walkways from areas not for pedestrian traffic.
- Keep aisles and walkways free of physical obstructions that would prevent access, including path-blocking objects, liquid or solid spills, and other obstructions.
- Keep aisles at least 3 feet wide where necessary for reasons of access to doors, windows, or standpipe connections.
- Keep stairs clean, dry, and free of waste, well lit, and provided with adequate handrails and treads that are in good condition.
- Keep floors clean; dry (dry as possible); slip-resistant; and free of waste, unnecessary material, oil and grease, protruding nails, splinters, holes, or loose boards.
- Provide an adequate number of waste receptacles at accessible locations throughout all work areas.

Our housekeeping procedures for our production areas include:

- Maintain adequate lighting systems in a clean and efficient manner and replace bulbs as soon as possible after failure.
- Properly maintain walls.
- Keep windows clean by washing them regularly.
- Keep blinds clean by washing regularly.
- Properly maintain doors and windows in a good working order and repair any damage to doors and windows as soon as possible.
- Provide adequate ventilation to all work areas to keep air free of dust and other contaminants.
- Maintain and clean all ventilation systems and HVAC systems at regular intervals.

Outside the Facility

Our housekeeping procedures for keeping our grounds and building faces/sides neat and orderly include:

- Keep the parts of buildings that are visible to public roads cleaned by washing them at regular intervals.
- Keep the other parts of buildings cleaned at regular intervals.
- Keep all doors and loading docks completely free of debris, shrubs, or other obstructions.
- Maintain visibility through all windows by washing at regular intervals.
- Keep doors and windows properly maintained in good working order.
- Repair any damage to doors and windows at regular intervals.
- Provide any stairs or platforms adjacent to or leading into the building(s) with adequate rails, adequate treads to climb and an area clean and free of materials.
- Keep grounds neat and orderly, free of refuse and unnecessary materials.
- Store materials outdoors only in designated areas of the grounds.
- Provide designated walkways through grounds, preferably paved and kept clear of snow, ice, materials, or any other physical hazards.
- Provide a lighting system that is adequate to allow employees to navigate around the grounds as necessary at dusk and after dark.
- Maintain a neat landscaping appearance--trim lawn, trees and shrubs in such a way as to minimize any possible safety hazards.
- Trim grass short enough to prevent trip hazards to employees.
- Prevent trees and shrubs from obstructing doors and windows.

Training

All of our employees, including maintenance and contractor employees, need to fully understand the safety and health hazards of poor housekeeping and improper chemical storage to protect themselves, their fellow employees, and the citizens of nearby communities. While training in Hazard Communication will help employees to be more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding MSDS's, we will also train them as part of our Housekeeping Program, covering housekeeping procedures and safe work practices, hazard reporting, and other areas pertinent to housekeeping.

The Safety Officer trains employees on housekeeping procedures. He/she trains new employees at the time of their initial assignment and keeps track of their training. When a new procedure is introduced, he/she retrains all employees and keeps track of their retraining as above.

Employees sign certificates upon completion of their training. All training and retraining records contain the identity of the employee, the date of training, and the means used to verify that they understood their training.

Employee Participation

Our employees are a significant in implementing and maintaining an effective housekeeping program for the facility. SDV Construction, Inc. strongly encourages employees to participate in:

- Conducting and developing the housekeeping program elements and hazard assessments as well as incident investigation findings.
- Obtaining access to the housekeeping program including any hazard analyses.

Industrial Hygiene Program

Purpose

The purpose of the IH Program is to ensure that all chemical and physical hazards are identified, evaluated, and controlled in order to reduce the risk of work-related disease or illness. This is accomplished through worker exposure and is assessed through workplace exposure monitoring and observation of work when determined appropriate.

Objectives

- Assess exposure to determine the potential for worker exposure in order to reduce the risk of work-related disease or illness.
- Provide workplace monitoring to assess worker exposure to chemical and physical hazards through appropriate workplace monitoring (including personal, area, wipe, and bulk sampling as appropriate); biological monitoring; and observation by qualified industrial hygienists.
- Document exposure assessments performed and any workplace monitoring.
- Communicate information concerning IH-related hazards to all affected workers and management. The transmittal of IH-related hazards is accomplished by means of the Hazard Communication Program (See the Hazard Communication Program).

Jobsite Hazard Assessment and Hazard Control Planning

The assessment of jobsite hazards and hazard control planning are initiated through communication of upcoming job scopes and work plans. In the absence of written work plans, job scopes and work plans will be communicated verbally to the employees before work is performed. Job scopes and work plans include:

- Job Site Hazard Evaluations (JSHEs) documents provided.
- Other documents communicating job scopes or work plans provided.
- Documents communicating work hazards, such as Material Safety Data Sheets (MSDSs).
- Other SDV Construction developed documents that communicate job scopes or work plans for work to be performed.

These documents are reviewed by our safety officer and by the qualified industrial hygienist (QIH) to provide an initial assessment of all IH-related hazards to be encountered on a job. This assessment will be documented by the safety officer and QIH. The information is then delivered and communicated to the appropriate Foreman and/or Project Managers performing the work. Information provided supervisors and workers include:

- Initial identification of IH-related hazards;
- Control methods to control identified hazards;
- Instructions for further assessment by the IH Team if necessary during the performance of the job;
- Exposure assessments.

Occupational Exposure Limits

The Occupational Exposure Limits (OELs) used by the IH Program include the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) as well as the current edition of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs), which are issued annually. The goal of IH Program is to comply with these OELs. In cases where the current edition of the ACGIH TLV or BEIs is more protective than the OSHA PELs, the ACGIH limit is used. Additional requirements from applicable OSHA standards are complied with in conjunction with ACGIH TLVs.

For the IH-related physical hazards of occupational noise and thermal stress, the IH Program also complies with the requirements of the ACGIH TLVs.

Meeting and maintaining compliance with the OELs is accomplished by the IH Team using methods described throughout this IH Program.

Workplace Exposure Monitoring

Workplace monitoring is designed to assess worker exposure to chemical and physical hazards (including personal, area, wipe, and bulk sampling). Workplace monitoring is performed by the Industrial Hygienist when it is necessary to meet the objectives of a Comprehensive Work Activity Assessment

Equipment and technical measures used as part of workplace monitoring are performed by qualified individuals. All equipment and technical measures used shall conform to current prescribed analytical methods:

- OSHA/ACGIH prescribed monitoring equipment specifications;
- Validated monitoring and analysis methodology by OSHA and the National Institute of Occupational Safety and Health (NIOSH), or in the absence of validated methods, partially validated methods;
- Analysis of samples by an American Industrial Hygiene Association (AIHA) accredited laboratory.

Hazard Control Methods

When necessary in order to control IH-related hazards in the workplace (e.g., gases, vapors, fumes, dusts, and mists; noise; heat stress; non-ionizing radiation), engineering, administrative and/or personal protective equipment controls are employed to keep worker exposures within prescribed limits and to meet requirements of applicable construction specifications. Implementation of controls follows the hierarchy of first implementing engineering controls when feasible and practical, then administrative controls. If these control methods cannot be utilized reasonably or feasibly, then PPE is prescribed.

Assessment Notification and Documentation

- When necessary all exposure assessments conducted by the Industrial Hygienist will be documented in an IH report and kept on record at our main office.
- All monitoring results are recorded in these reports, which describe the tasks and locations where monitoring occurred, identity of workers monitored and represented by the monitoring, and identify the sampling methods, sampling durations, control measures in place during monitoring (including the use of PPE), and any other factors that may have affected sampling results.
- Written notification of monitoring results are made to personnel monitored and those represented by monitoring within the timeframes specified in applicable portions of Title 29 CFR Parts 1910 and 1926.
- When requested, monitoring results will be available and transmitted to the appropriate individuals within one working day of receipt.
- All records will be kept at the SDV main office for storage and retrieval.

Reporting

SDV Construction will immediately notify the appropriate personnel in the event that personnel exposure to chemical, biological or physical hazards are above the TLV's observed.

Integrated Work Management (IWM)

This plan has been developed, in its entirety, based on ISMS principles. Every contract the SDV will consider will include the implementation and execution of these principles. Documentation will be developed for every project to include:

1. Assigned management personnel responsible for safety of that particular project who will be accountable for the protection of the public, workers and the environment.
2. Defined, documented lines of authority for ensuring the safety of the project at all levels.
3. Only qualified and accountable personnel who have appropriate authority to make and execute decisions will be names in these roles.
4. Safety will be priority over all other goals of the project and personnel will commit to this ideal.
5. Safety standards will be acknowledged, hazards addressed and clear awareness as well as mitigation will be determined prior to the start or continuation of any/all work. The public, workers an environment will all be considered during this evaluation.
6. Administrative and engineering controls will be implemented first and foremost. Hazards will be addressed on each individual project and mitigation will be accomplished accordingly.
7. All operations requirements will be clearly communicated to all tiers of the project and commitment to understanding and execution will be received prior to the start of any activities that are affected by the ISMS principles.
8. Work will always be
    a. Planned
    b. Hazards analyzed
    c. Hazards controlled or mitigated
    d. Work will be performed
    e. Feedback requested from employees and subcontractors regarding adequacy of policy implementation, documentation, communication and necessary modifications to our process.

Lead Safety Program

Purpose

The purpose of SDV Construction, Inc. written Lead Awareness Program is to:

- Prevent lead exposure of all workers, and their families.
- Provide employees who must work on lead abatement projects the tools to protect themselves, to protect the inhabitants of the buildings, and to protect the environment.
- Prevent potential environmental contamination with lead from any construction activities
- Make employees aware of the health risks associated with exposure to lead in the workplace
- State clearly that only licensed and certified employees are allowed to abate lead-containing materials, specifically lead-containing paint
- Provide guidelines for non licensed or certified employees in recognizing lead -containing materials and working safely with them.
- Comply with lead regulations issued by OSHA, EPA and other state and federal agencies
- Insure no employee be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air averaged over an 8-hour period.

References

- OSHA 29 CFR 1910.1025, including Appendices A, B, C, D: Lead in General Industry
- OSHA 29 CFR 1926.62: Lead in Construction Industries
- EPA 40 CFR, Part 745, Lead-based paint poisoning prevention, including Sub-Parts D, E, F, and L

Scope

This program is applicable to all employees of SDV Construction, Inc. and any subcontractor working at an SDV Construction jobsite. This program is applicable to all locations where elemental lead, inorganic lead compounds, or lead-containing paint is present. With regard to OSHA, this program applies to, but is not limited to the disturbance of lead which involves manual demolition of structures, scraping, sanding, heat gun applications, power tool cleaning, cleanup, and spray painting of lead paint, using lead containing mortar, lead burning, rivet busting, abrasive blasting, welding, cutting, and torch burning. Described in general terms, it applies to removal or encapsulation, installation of lead materials, new construction or renovation, emergency cleanup, transportation, disposal, and storage of lead materials.

Elements of the Program

Regulations addressing working with lead-containing materials are extensive and complex, and often confusing. Consequently, this program is broken into the elements most commonly encountered. Elements are:

- Removal of lead-containing paint
- Other operations where lead-containing items may be machined, heated, or otherwise handled in a manner where lead may be released into the air.
- Total (100%) removal of lead, per EPA criteria and definition.
- Working with lead- other

These four elements will be handled individually throughout all sections of this program.

Working with paint containing lead (removal, disposal)
OSHA and the EPA have set forth requirements for certification and training of employees involved in removal of lead paint. Only a "Certified Firm" may participate in lead paint removal (SDV is not certified and will subcontract the work and monitoring out to third party certified contractors).

There must also be a "Lead Abatement Supervisor" who oversees all lead paint removal. Work may be done by "trained lead abatement workers" – workers who have been trained by following EPA guidelines, to understand and properly handle lead-containing paint.

All paint removal projects must be reviewed by SDV Construction Inc. If necessary we will test the paint for lead content before any removal work begins. The testing will usually be conducted onsite, using an XRF (X-Ray Fluorescence) Spectrum Analyzer or equivalent testing devices; these processes do not disturb the integrity of the lead paint. If necessary, paint chips may be collected and submitted to an authorized laboratory for quantitative analysis. All analytical work must be completed before paint removal can begin.

Working with welding, cutting and soldering of lead-containing materials

Lead vaporizes at 1100 o F, and these vapors can be inhaled by unprotected workers. These processes can also generate minute particles of lead dust which can be inhaled. Improperly handled wastes from these processes pose a potential hazard to human health and the environment.

When there is reason to expect that the materials to be welded, cut, or otherwise disturbed contain lead, the materials should be tested prior to beginning the work. If lead is present, use of appropriate respirators, and/or exhaust ventilation, is required. Where exhaust ventilation is used to control employee exposures to acceptable levels, quarterly exhaust performance assessments are required.

Welding, cutting and soldering lead-containing materials must be done in well-ventilated areas. Areas where lead dust or debris may accumulate must be covered before the operations begin, and the covering material and waste disposed of in an appropriate covered container labeled "Lead Waste".

Working with lead – other

Employees must be made aware of the hazards associated with each process, and the steps to protect themselves from exposure to the lead. For each unique process, written instructions must be developed and made readily available to all who utilize the given process. Signs and barricades will be posted informing potential exposed workers and the public that there is lead present.

If these processes have the potential to generate lead fumes or dusts, workers must wear appropriate respirators, gloves, protective clothing, and practice good hygiene (i.e., no food or drink in the work area, through washing of hands and other exposed surfaces before leaving the work area). PPE will be provided to workers at no cost to them. Workers must collaborate with the designated safety representative to identify the risks associated with the various processes, and participate in a respiratory protection program, where appropriate.

Total Removal of lead

When total removal of lead is required, EPA dictates the use of very specific procedures (EPA 40 CFR Part 745, section L.) It is not anticipated that total removal will be done by SDV Construction, Inc. Should this become an issue, the certified licensed abatement company will be utilized.

Training

All employees who may be in contact with lead containing material should be trained in the hazards associated with their tasks. Employees in areas where lead is present but will not be disturbed should have at minimum a lead awareness course. Employees removing lead should be trained per EPA guidelines. All training will be documented and kept on site. Training records will be provided if required.

PPE (Personal Protective Equipment)

All PPE worn will be provided by the SDV Construction, Inc. If respiratory protection is required all procedures will be followed per company safety policy.

When the job is completed, all waste will be bagged and treated as lead-containing waste. All disposable PPE will also be bagged and disposed of accordingly. Respirators should be thoroughly cleaned.

Definitions

- **Action Level:** Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period.
- **Blood Lead Level (BLL):** A measure of the amount of blood present in an individual's blood, measured in micrograms per deciliter of blood
- **Certified lead abatement worker**: A worker who has taken the training and testing that permits him to remove lead-containing paint, and to supervise other trained workers at this task; Training workers per EPA-approved curriculum is required.
- **Lead**: Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition per OSHA are all other organic lead compounds.
- **Lead-based Paint**: Paint containing at least 0.7 milligrams of lead per square centimeter (per OSHA) (or 1.0 milligram of lead per square centimeter of surface area, per EPA), or 0.5% lead by weight
- **Lead-Containing Material (LCM):** Any material that has been confirmed through laboratory analysis to contain any detectable quantity of lead
- **Lead Hazard Assessment:** Determination of employee exposure to lead by sampling / monitoring the employee's regular exposure to lead, typically in an eight-hour work day.
- **Permissible Exposure Limit**: concentrations less than fifty micrograms per cubic meter of air, averaged over an 8-hour period.
- **Renovation:** Modification of a structure that disturbs lead paint
- **Prohibited Practices:** work practices prohibited during renovation:
    - open-flame burning or torching of paint; sanding, grinding, planning by machine unless machine is EPA-approved operating a heat gun above 1100oF on lead paint

Lockout/Tagout Program

Purpose

The purpose of this Lockout/Tagout Program is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. We also want to incorporate applicable requirements for the lock out and tag out of energized electrical and pressurized systems from 29 CFR 1926 and 29 CFR 1910 for construction and service work, respectively. This program serves to:

- Establish a safe and positive means of shutting down machinery, equipment and systems.
- Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
- Provide a secondary control system (tagout) when it is impossible to positively lockout the machinery or equipment.
- Establish responsibility for implementing and controlling lockout/tagout procedures.
- Ensure that only approved locks, standardized tags and fastening devices provided by the company will be utilized in the lockout/tagout procedures.

Administrative Duties

Our Safety Officer will be responsible for implementing the lockout/tagout program. Our Project Managers and Superintendents are responsible for enforcing the program and insuring compliance with the procedures in their departments. Our Safety Officer is responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized employees.

- Authorized employees are responsible for following established lockout/tagout procedures.
- Affected employees (all other employees) are responsible for insuring they do not attempt to restart or re-energize machines or equipment which are locked out or tagged out.

Procedures

The ensuing items are to be followed to ensure both compliance with the OSHA Control of Hazardous Energy Standard and the safety of our employees.

Preparation for Lockout or Tagout

Employees who are required to utilize the lockout/tagout procedure must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means. The four types of energy sources are:

- Electrical (Most Common)
- Hydraulic or Pneumatic
- Fluids and Gases
- Mechanical

More than one energy source may be utilized on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly.

General Requirements

Lockout/Tagout (LO/TO): Notify Superintendent a minimum of 24 hours in advance of activity requiring utility or equipment shutdown.

- Verify that normal stopping procedures have occurred.
- Relieve, restrain, or otherwise render safe all potentially hazardous stored energy.
- Operate the associated controls to make certain there is no release of energy and return the controls to the neutral, off or blanked position.
- Install locks and tags on de-energized equipment, systems or circuits at isolation devices capable of being locked out.
- Install individual locks with tag that has the name and phone number of individual authorized to place and remove lock, date of service was locked out, and why service is locked out will be affixed at each lockout location.
- If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
- Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out; the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.
- Group lockout or tagout devices shall be used in accordance with the procedures required by paragraph (c)(4) of this section including, but not necessarily limited to, the following specific requirements:
- Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);
- When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and
- Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

Electrical

- Shut off power at machine and disconnect.
- Disconnecting means must be locked or tagged.
- Press start button to see that correct systems are locked out.
- All controls must be returned to their safest position.
- Points to remember:

If a machine or piece of equipment contains capacitors, they must be drained of stored energy.

Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks. Some equipment may have a motor isolating shut-off and a control isolating shut-off. If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

Hydraulic/Pneumatic

- Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tagout the valve supplying energy to the piece of equipment being serviced.
- Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
- Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc.).

Fluids and Gases

- Identify the type of fluid or gas and the necessary personal protective equipment.
- Close valves to prevent flow, and lockout/tagout.
- Determine the isolating device, then close and lockout/tagout.
- Drain and bleed lines to zero energy state.
- Some systems may have electrically controlled valves. If so, they must be shut off and locked/tagged out.
- Check for zero energy state at the equipment.

Mechanical Energy

Mechanical energy includes gravity activation, energy stored in springs, etc.

- Block out or use die ram safety chain.
- Lockout or tagout safety device.
- Shut off, lockout or tagout electrical system.
- Check for zero energy state.
- Return controls to safest position.

Release from Lockout/Tagout

- Inspection: Make certain the work is completed and inventory the tools and equipment that were used.
- Clean-up: Remove all towels, rags, work-aids, etc.
- Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
- Check controls: All controls should be in their safest position. The work area shall be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
- Remove locks/tags: Remove only your lock or tag.

LO/TO Involving More than One Person

When service and/or maintenance is performed by more than one person, each authorized employee shall place his own lock or tag on the energy isolating source. This shall be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place his tag on the equipment.

Removal of an Authorized Employee's Lockout/Tagout by the Company

Each location must develop written emergency procedures that comply with 1910.147(e)(3) to be utilized at that location. Emergency procedures for removing lockout/tagout should include the following:

- Verification by employer that the authorized employee who applied the device is not in the facility.
- Make reasonable efforts to advise the employee that his/her device has been removed. (This can be done when he/she returns to the facility).
- Ensure that the authorized employee has this knowledge before he/she resumes work at the facility.

Shift or Personnel Changes

Each site must develop written procedures based on specific needs and capabilities. Each procedure must specify how the continuity of lockout or tagout protection will be ensured at all times.

Procedures for Outside Personnel/Contractors

- Outside personnel/contractors shall be advised that the company has and enforces the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.
- The company will obtain information from the outside personnel/contractor about their lockout/tagout procedures and advise affected employees of this information.
- The outside personnel/contractor will be required to sign a certification form. If outside personnel/contractor has previously signed a certification that is on file, additional signed certification is not necessary.

Training

Each authorized employee who will be utilizing the lockout/tagout procedure will be trained in the recognition of applicable hazardous energy sources, type and magnitude of energy available in the work place, and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the lockout/tagout procedure) shall be instructed in the purpose and use of the lockout/tagout procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

Training will be certified using Attachment B (Authorized Personnel) or Attachment C (Affected Personnel). The certifications will be retained in the employee personnel files.

Retraining

When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving any aspect of our LO/TO program we will re-train the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the employee has not been previously trained.
- When there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced.

- Where inadequacies in an affected employee's work involving LO/TO indicate that the employee has not retained the requisite proficiency.

Periodic Inspection

A periodic inspection (at least annually) will be conducted of each authorized employee under the lockout/tagout procedure. This inspection shall be performed by the Vice President of Operations. If Vice President of Operations is also using the energy control procedure being inspected, then the inspection shall be performed by another party.

The inspection will include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control (lockout/tagout) procedure. The inspection will also consist of a physical inspection of the authorized employee while performing work under the procedures.

The Safety Officer shall certify in writing that the inspection has been performed. The written certification shall be retained in the individual's personnel file.

Attachment A

List of Authorized Personnel
For
Lockout/Tagout Procedures

NAME	JOB TITLE

Attachment B

Certification of Training

(Authorized Personnel)

I certify that I received training as an authorized employer under SDV Construction Inc's Lockout/Tagout program. I further certify that I understand the procedures and will abide by those procedures.

_____ _____

AUTHORIZED EMPLOYEE SIGNATURE DATE

Attachment C

Certification of Training

(Affected Personnel)

I certify that I received training as an Affected Employee under SDV Construction Inc's Lockout/Tagout Program. I further certify and understand that I am prohibited from attempting to restart or re-energize machines or equipment that are locked out or tagged out.

_____ _____

AFFECTED EMPLOYEE SIGNATURE DATE

Attachment D

Lockout/Tagout Inspection Certification

I certify that _____ was inspected on this date utilizing lockout/tagout procedures. The inspection was performed while working on

_____ .

_____ _____

AUTHORIZED EMPLOYEE SIGNATURE DATE

_____ _____

INSPECTOR'S SIGNATURE DATE

Attachment E

Lockout/Tagout

Energy Control Procedures

Specific to Each Machine

Preparation for Shut Down

1. Identify equipment to be shut down: _____
2. Location in facility: _____
3. Procedures to notify all **affected employees**: _____

   _____
4. Identify **all** power sources:

   a) Electrical: _____

   b) Air: _____

   c) Steam: _____

   d) Hydraulic: _____

   e) Gravity: _____

   f) Other: _____
5. Identify lockout/tagout devices to be used: _____

   _____

   _____

   _____

Shut Down

Description of the shut down procedures: _____

_____

_____

_____

Isolation

Procedures for isolation of equipment from **all** power sources: _____

_____

_____

_____

Lockout/Tagout Device Application

Procedure for locking out or tagging out equipment: _____

_____

_____

_____

Release of Stored Energy

Procedures for the release of stored energy (where applicable): _____

_____

_____

_____

Verification of Isolation

Procedures to ensure that equipment is isolated from **all** power sources: _____

_____

_____

_____

_____

Start-Up

1. Visual inspection of the machine and equipment. Ensure all tools have been removed. Return guards to place.
2. Notify all **affected employees** and **other** employees of the start up.
3. Remove all lockout/tagout devices and restore power.

Liquid Petroleum (Lp) Gas Compliance Program

Purpose

Liquefied petroleum (LP) gases are flammable, nontoxic gases. Because SDV Construction, Inc. uses these gases as a fuel to operate equipment and systems; we are dedicated to the protection of employees who store, handle, use, or work around LP gas.

This written LP Gas Compliance Program is intended to help us protect the safety and health of our employees and meet the applicable requirements of 29 CFR 1926.153, Liquefied Petroleum Gas (LP-Gas).

Administrative Duties

Our Safety Officer is our company's LP Gas Compliance Program Administrator, is responsible for developing and maintaining the written LP Gas Compliance Program. This person is solely responsible for all facets of the program and has full authority to make necessary decisions to ensure the success of this program.

Copies of the program may be obtained from the Safety Officer at the main office. If after reading this program, you find that improvements can be made, please contact the Safety Officer.

We encourage all suggestions because we are committed to the success of this written program.

Program Requirements

LP gas systems are installed to operate a variety of, heating units and electrical generators. The exhaust fumes from burning LP gas contain carbon monoxide. Carbon monoxide gas is odorless and can cause death or serious brain injury if inhaled. You can die or be brain damaged by Carbon Monoxide. The following are OSHA requirements and should be followed by all SDV Construction employees;

- Do not store LP gas tanks inside buildings! LP gas can be used indoors to heat the work area but tanks should be kept and stored outside when not in use. They should be stored upright and secured from falling.

LP gas leaks can result in fire or explosion. **If LP gas is detected**

- Do not touch electrical switches
- Open doors for ventilation
- Shut off LP gas supply at the LP tank
- Leave the area until odor clears
- Do not use a flame to locate the source of an LP gas leak.

Our Safety Officer is responsible for maintaining the ongoing mechanical integrity of LP-gas containers, equipment, and systems.

Protective Equipment

Our Safety Officer is responsible for ensuring that the following provisions are met. All protective equipment, including personal protective equipment (PPE), used at this company will be provided without cost to employees. Protective equipment will be chosen based on anticipated hazards and will be provided to employees.

Fire Prevention and Protection

Because LP gas is flammable, fire and explosion are two important hazards to prevent. This is done by 2A: ABC Fire Extinguisher. Should a fire occur, our company has provided and maintained suitable fire control equipment at the LP gas location.

Training

Under no circumstances may an employee install, remove, operate, and maintain LP gas containers, equipment, or systems until he/she has successfully completed this company's training program under the LP Gas Compliance Program. This includes all new employees, regardless of claimed previous experience. Our Safety Officer will identify new trainees and those employees who need retraining.

Program Evaluation

Although we may not be able to eliminate all problems in our LP Gas Compliance Program, we try to eliminate as many problems as possible to improve employee protection and encourage employee safe practices. By having our program administrator, Our Safety Officer, thoroughly evaluate and, as necessary, revise our program, we can eliminate problems effectively.

Machine/Equipment & Guarding Plan

Purpose

It is the policy of this company to permit only trained and authorized employees to operate machinery, tools, or equipment at any time. This policy is applicable to:

- Daily operators of machinery, tools, and equipment; and
- Those who only occasionally have cause to use machinery, tools, or equipment.

This written Machine/Equipment Safety and Guarding Plan describes methods and practices for care and use of machines, equipment, and tools that can be read and understood by all managers, supervisors, and employees at SDV Construction, Inc. This written plan is intended to be used to:

- Create an awareness of the hazards among our workforce,
- Standardize procedures for use and care of the equipment,
- Provide a consistent format for training employees on the proper procedures to be used,
- Minimize the possibility of injury or harm to our employees, and
- Demonstrate SDV Construction, Inc.'s compliance with machine safety and equipment usage requirements for general industry in Subpart O and P of 29 CFR 1910.

As our company is a construction employer, this plan is also intended to demonstrate SDV Construction, Inc.'s compliance with machine and tool safety requirements for construction in Subpart I of 29 CFR 1926.

Administrative Duties

Our Safety Officer is responsible for developing and maintaining this written Machine/Equipment Safety and Guarding Plan. This person is solely responsible for all facets of the plan and has full authority to make necessary decisions to ensure the success of this plan. Appropriate training and experience that is commensurate with the complexity of the plan, to administer or oversee our machine/equipment safety program and conduct the required evaluations.

If, after reading this plan, you find that improvements can be made, please contact the Safety Officer. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a safe and effective machine/equipment safety and guarding program is an important component of our overall safety plan. We strive for clear understanding, safe work practices, and involvement in the program from every level of the company.

Pre-Operational Procedures

Hand tools must be inspected prior to use to ensure that:

- For tools with jaws, jaws are not sprung to the point of slippage.
- For impact tools, they are free of mushroom heads.
- For tools with wooden handles, the handles are free of splinters or crack and are tight in the tool.
- The tool is otherwise safe for use.

Any machine or power-operated tool, function, or process, which may cause injury, will be guarded. All permanent guards are securely attached in good working order and all removable guards are in place on the machine or equipment before starting use. Guards meet these minimum general requirements:

- Prevent contact - The guards prevent hands, arms, or any part of an employee's body or clothing from making contact with dangerous moving parts.
- Secure - Guards are not easy to remove or alter. Guards and safety devices are made of durable material that will withstand the conditions of normal use. They are firmly secured to the machine.
- Protect from falling objects - The guards ensure that no objects can fall into moving parts.
- Create no new hazards - If a guard creates a hazard of its own such as shear point, a jagged edge, or an unfinished surface that can cause a laceration, then employees must not use the piece of machinery or equipment.

If a guard is defective, damaged, or in any way does not meet the requirements of these procedures, employees may not use the machine, and must immediately notify our Safety Officer.

Where the operation of a machine or accidental contact with it can injure employees in the vicinity, the hazard is either controlled or eliminated.

Employees must locate and put on necessary and appropriate personal protective equipment (PPE) for use with the machinery or equipment before beginning use. PPE can be obtained from the Safety Officer.

Employees must make sure that work areas are well lit, dry, and clean before beginning work. Sawdust, paper and oily rags are a fire hazard and can damage machinery and equipment.

Employees must change clothing or take off jewelry that could become entangled in the machinery or equipment they are to use.

Only qualified personnel may install or repair equipment. Employees must notify the Safety Officer if machinery or equipment is in need of any type of repair.

If a lock or tag is in place on a piece of machinery or equipment, it may not be removed and the machinery or equipment may not be used.

<u>Operating Procedures</u>

Employees may not remove a guard for any reason while operating any piece of machinery or equipment.

All necessary personal protective equipment (PPE) is worn while the machinery or equipment is running.

If an employee is distracted or unable to focus on the work with the machinery or equipment, they must stop work with that machinery or equipment.

Upon finishing with a piece of equipment, tool, or machine, basic maintenance must be performed. It should be kept sharp, oiled, and stored properly, as appropriate.

Problem equipment must be immediately reported to Superintendent or Foreman so it can be repaired or replaced.

Employees must always use the proper piece of machinery or equipment for the job.
Electric cables and cords are kept clean and free from kinks. Equipment may never be carried by its cord.

New Equipment Start-up Inspection Procedures
The procedures in this section are required at the following times:

- During and after the installation of new equipment,
- During and after the rearrangement of existing equipment into a new layout, and
- During the relocation of existing equipment.

Corrections that need implementation during the installation should be done as needed. Before operation of the equipment in the workplace, all specialty departments must signify that the equipment meets all expectations in their area of concern. Foremen are accountable for all phases of installation and for making sure all equipment is safe and efficient to run before letting employees operate it. Once Foremen have verified completion, the equipment can be put into service.

Permit-Required Confined Space Entry Program

Purpose

The purpose of this program is to inform interested persons, including employees that SDV Construction, Inc. is complying with the OSHA Confined Space Standard, Title 29 Code of Federal Regulations 1910.146. We have determined that because our jobsites occasionally include confined spaces we have a need for written procedures for the evaluation of confined spaces, and where permit-required spaces are identified, we have developed and implemented a permit-required confined space entry program. This program applies to all work operations where employees and/or our subcontractors must enter a permit-required confined space as part of their job duties. Copies of the written program may be obtained from the safety officer in the main office.

Under this program, we identify permit-required spaces in at the jobsites, and provide training for our employees according to their responsibilities in the permit space. These employees receive instructions for safe entry into our specific type of confined spaces, including testing and monitoring, appropriate personal protective equipment, rescue procedures, and attendant responsibilities.

This program is designed to ensure that safe work practices are utilized during all activities regarding the permit space to prevent personal injuries and illnesses that could occur.

General Information

A confined space is defined as any location that has limited openings for entry and egress, is not intended for continuous employee occupancy, and is so enclosed that natural ventilation may not reduce air contaminants to levels below the threshold limit value (TLV).

Examples of confined spaces include: manholes, stacks, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. Entry into confined spaces without proper precautions could result in injury, impairment, or death due to:

- Hazardous atmospheres that may be flammable or explosive (Above LEL)
- Oxygen Deficient Atmospheres (Less than 19.5% oxygen)
- Exposure to toxic materials (Methane gas, carbon monoxide, hydrogen sulfide)
- General safety or work area hazards such as steam or high pressure materials

Administrative Duties

Our Safety Officer is our Permit Required Confined Space Administrator and is responsible for establishing and implementing the written Permit Required Confined Space Program. This person has full authority to make necessary changes. If you have any questions contact the safety officer. Our Written Confined Space Program is located at the main office.

Hazard Evaluation for Permit Spaces

To determine if there are permit-required confined spaces at the jobsite we will conduct a hazard evaluation of the workplace. This evaluation has provided information necessary to identify the existence and location of permit-required confined spaces their workplace that must be covered by the Permit-Required Confined Space Entry Program. This written hazard evaluation is available at the main office.

Preventing Unauthorized Entry

To provide a safe work environment and to prevent exposed employees from accidentally entering a permit space, the following procedures are implemented to inform all employees of the existence, location, and danger posed by permit spaces. To inform employees of the existence of a permit space, we use the hazard evaluation information accompanied by our work orders. To ensure that unauthorized employees do not enter and work in permit spaces, we communicate those areas identified on the hazard evaluation and work order prior to work being started in the area. A sign reading DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER should be placed to keep out personnel that are not part of the confined space team.

Safe Permit Space Entry Procedures

The Entry Supervisor responsible for authorizing entry and issuing entry permits for work in our permit spaces. The file of permits and related documents are to be coordinated as specific to that jobsite. The procedures we follow for preparing, issuing, and canceling entry permits will also be coordinated and followed as specific to that site. All employees have the responsibility to read and understand confined space permits. If you do not understand any aspect of the permit contact entry supervisor.

Pre-Entry Evaluation

To ensure the safety and health of our employees, before allowing authorized workers to enter a permit space, we evaluate conditions in that space to determine if the conditions are safe for entry. Any employee, who enters the space, or that employee's authorized representative, has the opportunity to observe the pre-entry and any subsequent testing. The authorized entrant or that employee's representative also has the option of requesting a reevaluation of the space if they feel that the evaluation was not adequate.

Our company follows the procedures to evaluate each permit space before entry according to 1910.146(c)(5)(ii)(C). This includes testing the internal atmosphere with a calibrated direct-reading instrument for:

- Oxygen content (Must be between 19.5% to 23.5% oxygen)
- Flammable gases and vapors (Must be less than 10% of the LEL)
- Potential toxic air contaminants (Toxicity)

Periodic Evaluations

We also periodically test the atmosphere of the space to ensure that the continuous ventilation is preventing the accumulation of a hazardous atmosphere.

Hazard Reevaluation

Our Safety Officer will identify and reevaluate hazards based on possible changes in activities or other physical or environmental conditions that could adversely affect work. A master inventory of confined spaces shall be maintained. Any change in designation of a confined space will be routed to all affected personnel by the Safety Officer.

Hazard Controls

Hazard controls shall be instituted to address changes in the work processes and/or working environment. Hazard controls must be able to control the health hazards by eliminating the responsible agents, reduce health hazards below harmful levels, or prevent the contaminants from coming into contact with the workers.

The following order of precedence shall be followed in reducing confined space risks.

- Engineering Controls -Engineering controls are those controls that eliminate or reduce the hazard through implementation of sound engineering practices. Ventilation is one of the most common engineering controls used in confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space shall be ventilated until the atmosphere is within the acceptable ranges. Ventilation shall be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range.

  When conditions necessitate and can accommodate continuous forced air ventilation, the following precautions shall be followed:

  Employees shall not enter the space until the forced air ventilation has eliminated any hazardous atmosphere. Forced air ventilation shall be directed so as to ventilate the immediate areas where an employee is or will be present within the space. Continuous ventilation shall be maintained until all employees have left the space. Air supply or forced air ventilation shall originate from a clean source.

- Work Practice Controls - Work practice (administrative) controls are those controls which eliminate or reduce the hazard through changes in the work practices (i.e., rotating workers, reducing the amount of worker exposure, and housekeeping).

- Personal Protective Equipment (PPE) - If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE should be used. The Safety Officer shall determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable standards shall be selected in accordance with the requirements of the job to be performed.

Entry Permits

The Confined Space Entry Permit is the most essential tool for assuring safety during entry in confined spaces with known hazards, or with unknown or potentially hazardous atmospheres. The entry permit process guides the supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions. Before each entry into a confined space, an entry permit will be completed by the entry supervisor. The entry supervisor will then communicate the contents of the permit to all employees involved in the operation, and post the permit conspicuously near the work location. A standard entry permit shall be used for all entries.

A standard entry permit shall contain the following items:

- Space to be entered
- Purpose of entry
- Date and authorized duration of the entry permit
- Name of authorized entrants within the permit space
- Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems)
- Name(s) of personnel serving as Attendant(s) for the permit duration
- Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry
- Hazards of the permit space to be entered
- Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces)
- Acceptable entry conditions
- Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed
- Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
- Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry.
- Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue).
- Other information necessary for the circumstances of the particular confined space that will help ensure employee safety.
- Additional permits, such as hot work permits, which have been issued to authorize work on the permit space.

Permit Scope and Duration

A permit is only valid for one shift. For a permit to be renewed, the following conditions shall be met before each reentry into the confined space:

- Atmospheric testing shall be conducted and the results should be within acceptable limits. If atmospheric test results are not within acceptable limits, precautions to protect entrants against the hazards should be addressed on the permit and should be in place.
- The entry supervisor shall verify that all precautions and other measures called for on the permit are still in effect.
- Only operations or work originally approved on the permit shall be conducted in the confined space.

A new permit shall be issued, or the original permit will be reissued if possible, whenever changing work conditions or work activities introduce new hazards into the confined space. The Entry Supervisor shall retain each canceled entry permit for at least one (1) year to facilitate the review of the Confined Space Entry Program. Any problems encountered during an entry operation shall be noted on the respective permit(s) so that appropriate revisions to the confined space permit program can be made.

Confined Space Team Duties

Authorized Entrants

Those persons who have completed the training and are authorized to enter our permit spaces and are assigned specific duties and responsibilities that they must perform when they work in the permit space. Their duties and responsibilities are determined by the scope of work. The elements covered in the training program for authorized entrants include information regarding the scope of work to be performed and existing and/or potential hazards that may be created while working. Entrants enter the space and perform tasks per the confined space permit.

Authorized Attendants

Those persons who have completed the training and have been designated as permit space attendants are assigned specific duties and responsibilities that they must perform in permit space job duties. Attendants are located outside the space and are responsible to maintain communication with the entrant at all times. In the event of an emergency the attendant is responsible to contact rescue services and is NOT to enter the space to conduct rescue.

Entry Supervisors

Those persons who have completed the training and have been designated as permit space entry supervisors are assigned specific duties and responsibilities that they must perform in permit space job duties. Entry supervisors are considered the "competent person" for the entry. Supervisors must review permits with entrants and attendants as well as making sure the confined space is monitored.

Rescue and Emergency Services

SDV Construction, Inc. is not qualified to perform rescue services in the event of a permit space emergency. Therefore these services will be coordinated and addressed specifically for each job. At a minimum the designated customer or subcontractor assigned to perform rescue and emergency services must:

Perform the assigned rescue duties such as performing basic first-aid and cardiopulmonary resuscitation (CPR). SDV Construction, Inc. will ensure that at least one member of the rescue team holds a current certification in first-aid and CPR, and that affected employees practice making permit space rescues by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces.

Post-operations Procedures

Upon completion of work in a permit space, we will ensure that procedures to close off the space and cancel the permit are followed as required by the customer procedures.

Enforcement

Constant awareness of and respect for permit-required confined space entry hazards, and compliance with all safety rules are considered conditions of employment. SDV Construction, Inc. reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this permit entry program.

Multi-Employer Facility

When contractors or any other employers' workers (i.e., painters, electricians, or plumbers) will be working at this workplace, the Entry Supervisor will 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. This will be done prior to entry into the confined space.

Training

All employees who will enter confined spaces shall be trained in entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry. Training shall include:

- Explanation of the general hazards associated with confined spaces.
- Discussion of specific confined space hazards associated with the facility, location, or operation.
- Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces.
- Explanation of permits and other procedural requirements for conducting a confined space entry.
- A clear understanding of what conditions would prohibit entry.
- Procedures for responding to emergencies.
- Duties and responsibilities of the confined space entry team.
- Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers, and method(s) for alerting Attendant(s).

Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions. Training is documented and all training records are kept at the main office.

Power Industrial Truck Program

Purpose

It's hard to imagine any tool more important to materials handling than the powered industrial truck (Forklift). Like many companies, SDV Construction, Inc. relies on these versatile vehicles to load, unload, and move stock and other materials.

This written Power Industrial Truck Program establishes guidelines to be followed whenever any of our employees work with powered industrial trucks at this company. The rules established are to be followed to:

- Provide a safe working environment,
- Govern operator use of powered industrial trucks, and
- Ensure proper care and maintenance of powered industrial trucks.

The procedures here establish uniform requirements designed to ensure that powered industrial truck safety training, operation, and maintenance practices are communicated to and understood by the affected employees. These requirements also are designed to ensure that procedures are in place to safeguard the health and safety of all employees.

It is our intent to comply with the requirements of OSHA's 29 CFR 1926.600, 1926.602(c), and 1926.441 for construction activities as well as ANSI B56.1-1969. These regulations have requirements for powered industrial truck operations.

Administrative Duties

Our Safety Officer is responsible for maintaining this Powered Industrial Truck Program and has overall responsibility for the plan. Our Safety Officer will maintain all training records and evaluate Powered Industrial Truck operators in order ensure compliance with OSHA and ANSI standards. Copies of this written program may be obtained from the Safety Officer or the main office.

Training

Our Safety Officer will identify all powered industrial truck operators and ensure that prior to operation of the powered industrial truck the employees receive training per Power Industrial Truck Standards. Only trained and certified employees may operate forklifts on our jobsites.

Before we begin training an employee, our Safety Officer will determines if the potential powered industrial truck operator is capable of performing the duties necessary to be a competent and safe driver. This is based upon his/her physical and mental abilities to perform job functions that are essential to the operation of the vehicle.

These capabilities include the level at which the operator must:

- See and hear within reasonably acceptable limits, (this includes the ability to see at a distance and peripherally, and in certain instances, it is also necessary for the driver to discern different colors, primarily red, yellow, and green);
- Endure the physical demands of the job; and

- Endure the environmental extremes of the job, such as the ability of the person to work in areas of excessive cold or heat. An operator must be able to climb onto and off of a truck, to sit in the vehicle for extended periods of time, and to turn his/her body to look in the direction of travel when driving in reverse.

Once it is determined that a potential operator is capable of performing powered industrial truck duties, a designated training organization with a qualified instructor will conduct initial training and evaluation. This/These instructor(s) have the necessary knowledge, training, and experience to train new powered industrial truck operators.

Initial Training
During an operator's initial training, the instructor(s) combine(s) both classroom instruction and practical training. The classroom instruction includes the following formats: Lecture, discussion, interactive computer learning, videos, or written material. Classroom instruction, itself, covers the following topics:

- Classes of powered industrial trucks
- Pre-operational Inspections of the powered industrial trucks
- Safe operation of the powered industrial truck and hazards associated with operation.
- Load handling and understanding how to read load charts
- Safe fueling of the unit

The practical training includes practical hands on exercises by the trainee. All powered industrial truck operators are trained and tested on the equipment they will be driving before they begin their job.

If each potential operator has received training in any of the elements of our training program, and is evaluated to be competent, they need not be retrained in those elements before initial assignment in our workplace. The training must be specific for the types of trucks that employee will be authorized to operate and for the type of workplace in which the trucks will be operated.

Training Certification
After an employee has completed the training program, the instructor will determine whether the potential driver can safely perform the job. At this point, the trainee will take a performance test or practical exercise through which the instructor(s) will decide if the training has been adequate. All powered industrial truck trainees are tested on the equipment they will be driving.

Each certificate includes the name of the driver, the date(s) of the training, and the name of the person who did the training and evaluation.

Performance Evaluation
Each certified powered industrial truck operator is evaluated at least once every 3 years to verify that the operator has retained and uses the knowledge and skills needed to drive safely this evaluation is done by our Safety Officer or designated training organization. If the evaluation shows that the operator is lacking the appropriate skills and knowledge, the operator is retrained by our instructor(s).

Refresher Training

Refresher training is triggered by any of the following situations:

- If the operator is involved in an accident or a near-miss incident;
- If the operator has been observed driving the vehicle in an unsafe manner;
- When the operator is assigned to a different type of truck;
- If it has been determined during an evaluation that the operator needs additional training; or
- When there are changes in the workplace that could affect safe operation of the truck. This could include a different type of paving, reconfiguration of the storage racks, new construction leading to narrower aisles, or restricted visibility.

Personal Protective Equipment (PPE)

We have assessed our workplace and determined that the personal protective equipment needed to operate a forklift is as follows:

- Safety glasses
- Hard hats
- Gloves

Pedestrians

Because powered industrial trucks are typically used near pedestrians, we require both pedestrians and powered industrial truck operators to watch out for each other. All powered industrial truck operators must allow pedestrians to have the right away. As a powered industrial truck operator you operators are responsible for all aspects concerning safety of equipment and pedestrians.

Driving Into Trailers

When driving into trailers the operator must verify trailer chocks, supports, and dock plates prior to loading/unloading.

Maintenance

Investing time and effort into the proper upkeep of our equipment results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance and lubrication schedules, and completing the proper records, will also increase our trucks' longevity and enhance its resale value. Periodic maintenance (those completed monthly, every 6 months, or annually) is done by a factory-trained expert or a dealer. Our company retains all maintenance records. When renting equipment if any defects are found in equipment during the pre-operational inspection the rental company will be notified of defects and forklift will not be used.

Personal Protective Equipment (PPE) Program

This written program documents steps SDV Construction, Inc. has taken to minimize injury resulting from various occupational hazards present at our construction sites by protecting workers through the use of PPE when the hazards cannot be eliminated.

Our Safety Officer is the program coordinator and has overall responsibility for the program. The safety and health manager will designate appropriate foremen to assist in training employees and monitoring their use of PPE. Our Safety Officer will review and update the program as necessary. Copies of this program may be obtained from our Safety Officer.
PPE shall conform to applicable standards, and be in good working condition. PPE shall be appropriate for work hazard to be encountered, and is considered to be the last line of defense against injury or illness.

We at SDV Construction, Inc. believe it is our obligation to provide necessary (PPE) equipment for a hazard free environment to our employees. Any employee encountering hazardous conditions must be protected against the potential hazards.

The purpose of protective clothing and equipment (PPE) is to shield or isolate individuals from chemical, physical, biological, or other hazards that may be present in the workplace. (See separate documents for respiratory protection and hearing conservation programs.)

Establishing an overall written PPE program detailing how employees use PPE makes it easier to ensure that they use PPE properly in the workplace and document our PPE efforts in the event of an OSHA inspection. SDV Construction, Inc.'s PPE program covers:

- Purpose
- Hazard assessment
- PPE selection
- Employee training
- Cleaning and maintenance of PPE
- PPE specific information

If after reading this program, you find that improvements can be made, please contact the Safety Officer. We encourage all suggestions because we are committed to the success of our Personal Protective Equipment Program. We strive for clear understanding, safe behavior, and involvement in the program from every level of the company.

Purpose of Program

The basic element of any PPE program is an in depth evaluation of the equipment needed to protect against the hazards at the workplace; this is the initial hazard assessment for which written documentation is required. Two basic objectives of any PPE program should be to protect the wearer from incorrect use and/or malfunction of PPE. The purpose of this Personal Protective Equipment (PPE) Program is to document the hazard assessment, protective measures in place, and PPE in use at this company. PPE devices are not to be relied on as the only means to provide protection against hazards, but are used in conjunction with guards, engineering controls, and sound manufacturing practices. If possible, hazards will be abated first through engineering controls, with PPE to provide protection against hazards that cannot reasonably be abated otherwise.

Hazard Assessment

In order to assess the need for PPE the following steps are taken:

The Safety Officer, along with the foremen, identifies job classifications where exposures occur or could occur.

The Safety Officer or designee examines the following records to identify and rank jobs according to exposure hazards:

- Injury/illness records
- First aid logs

The Safety Officer conducts a walk through survey of workplace areas where hazards exist or may exist to identify sources of hazards to employees. They consider these basic hazard categories:

- Impact
- Heat
- Penetration
- Harmful dust
- Compression (roll over)
- Light (optical) radiation
- Chemical

During the walk through survey the Safety Officer observes and records the following hazards along with PPE currently in use:

- Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.
- Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc
- Types of chemical exposures.
- Sources of harmful dust.
- Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- Sources of falling objects or potential for dropping objects
- Sources of sharp objects that might pierce the feet or cut the hands
- Sources of rolling or pinching objects that could crush the feet
- Layout of workplace and location of co-workers
- Certain electrical hazards.

Following the walk through survey, the Safety Officer organizes the data and information for use in the assessment of hazards to analyze the hazards and enable proper selection of protective equipment. An estimate of the potential for injuries is now made. Each of the basic hazards is reviewed and a determination made as to the frequency, type, level of risk, and seriousness of potential injury from each of the hazards found. The existence of any situations where multiple exposures occur or could occur is considered.

The Safety Officer documents the hazard assessment via a written certification that identifies the workplace evaluated, the person certifying that the evaluation has been performed, the date(s) of the hazard assessment, and that the document is a certification of hazard assessment.

Employee Training

The Safety Officer provides training for each employee who is required to use personal protective equipment. Training includes:

- When PPE is necessary?
- What PPE is necessary?
- How to wear assigned PPE?
- Limitations of PPE
- The proper care, maintenance, useful life, and disposal of assigned PPE

Employees must demonstrate an understanding of the training and the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment. Employees are prohibited from performing work without donning appropriate PPE to protect them from the hazards they will encounter in the course of that work.

If the Safety Officer has reason to believe an employee does not have the understanding or skill required the employee must be retrained. Since an employee's supervisor is in the best position to observe any problems with PPE use by individual employees, the Safety Officer will seek this person's input when making this determination.

Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used, which would render previous training obsolete. Also, inadequacies in an affected employee's knowledge or use of the assigned PPE, which indicates that the employee has not retained the necessary understanding or skills, would require retraining.

The Safety Officer certifies in writing that the employee has received and understands the PPE training.

Because failure to comply with company policy concerning PPE can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined for noncompliance according to the following schedule:

- Verbal warning for the first offense accompanied by retraining
- Written reprimand for the second offense that goes in the employee's permanent record
- Suspension without pay for a third offense and documentation in the permanent record
- Dismissal as a last resort.

Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees. If PPE is for general use, the Safety Officer has responsibility for cleaning and maintenance. If a piece of PPE is in need of repair or replacement it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor or the Safety Manager. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Contaminated PPE that cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

PPE Specific Information

Eye and face protection
It is the policy of this company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI approved goggles/face shields to help prevent eye and face injuries, including those resulting from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or light radiation, for example.

Employees from temporary work agencies and sub contractors are required to wear goggles/face shields if assigned to work in the designated work areas.

All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.

All employees who work in designated work areas and/or job assignments are responsible for wearing company provided goggles/face shields to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.

All employees required to wear goggles/face shields must routinely inspect and properly care for their goggles/face shields.

Foot Protection-Safety Shoes
It is the policy of this company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and /or job assignments are required to wear ANSI Z41-approved safety-toe and /or chemical resistant footwear when work operations present hazards such as falling objects, pinch points, or material handling which may result in injury to the foot. Otherwise, wear sturdy and durable work boots or shoes in good repair to help prevent foot injuries, ankle injuries, slips, and falls. Athletic shoes such as running shoes, tennis shoes, clogs, or sandals are not acceptable.

All employees who work in designated work areas and/or job assignments are responsible for purchasing and wearing work shoes to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.

Our Safety Officer is responsible for informing new employees who are assigned to the designated work areas of the safety shoe policy and the procedures for obtaining them. The new employee is responsible for reporting to his/her first day of work wearing sturdy work boots.

Hand Protection -- Gloves
It is the policy of this company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear gloves to help prevent hand injuries, This includes the proper insulated gloves needed to perform electrical tasks.

Employees from temporary work agencies and sub contractors are required to wear protective gloves as needed if assigned to work in the designated work areas.

All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.

All employees who work in designated work areas and/or job assignments are responsible for wearing company provided gloves to comply with this policy. (Note we only provide voltage rated gloves.) Failure to comply will result in disciplinary action up to and including discharge.

All employees required to wear protective gloves must routinely inspect and properly care for their assigned gloves (if the gloves are not disposable).

Head protection -- Hard hats
It is the policy of this company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI Z89.1-approved hard hats to help prevent head injuries, including those resulting from falling objects, bumping the head against a fixed object, or electrical shock.

Employees from temporary work agencies and sub contractors are required to wear hard hats if assigned to work in the designated work areas.

All supervisors and managers are responsible for ensuring employees under their charge are in compliance with this policy.

All employees who work in designated work areas and/or job assignments are responsible for wearing company provided hard hats to comply with this policy. Failure to comply will result in disciplinary action up to and including discharge.

All employees are required to wear hard hats at all times during the performance of work for construction or service work, unless written waiver is obtained from Safety Officer. Waiver must be posted at job site, or have waiver in possession during performance of work. Hard hats must be routinely inspected and properly cared for.

Clothing
Wear clothing appropriate for task. Shorts, cutoffs, and sleeveless shirts (i.e., muscle shirts, tank tops) are not permitted. Bare backs (shirtless) are not permitted on work site.

<u>Where Employees Provide Their Own PPE</u>
Generally SDV Construction, Inc. provides all Personal Protective Equipment for employees. However on the rare occasion where an employee provides their own SDV Construction, Inc. will assure its adequacy, including proper maintenance, and sanitation of such equipment.

Respiratory Protection Program

Purpose

SDV does not anticipate performing tasks that requires the use of respiratory protection at any jobsite this plan and training are strictly precautionary and in some cases a requirement under designated contracts.

This Respiratory Protection Program specifies standard operating procedures to protect all construction site employees from respiratory hazards, according to the requirements of 29 CFR 1926.103 which simply refers to 29 CFR 1910.134 and ANSI Z88.2. Respirators are to be used only where engineering control of respirator hazards is not feasible, while engineering controls are being installed, or in emergencies. In the event respiratory protection is required the following procedures will be followed and only trained personnel or contractors will be allowed to conduct such tasks.

Respirator Selection

Our Safety Officer is our Respirator Program Administrator and is responsible for implementing our program. Our Safety Officer will select respirators and coordinate all essential aspects of our program. Respirators are selected on the basis of respiratory hazards to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.

Detailed procedures will be will be written addressing hazards and proper selection for respiratory protection. Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection.

*Our company's selection procedures include coverage of the following OSHA requirements, when selecting any respirator in general SDV Construction, Inc. will:

- Select and provide respirators based on respiratory hazard(s) to which a worker is exposed and workplace and user factors that affect respirator performance and reliability.
- Select a NIOSH-certified respirator. (NIOSH stands for the National Institute for Occupational Safety and Health)
- Identify and evaluate the respiratory hazard(s) in the workplace, including a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Consider the atmosphere to be immediately dangerous to life or health (IDLH) if you cannot identify or reasonably estimate employee exposure.
- Select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

*Our company's selection procedures include coverage of the following OSHA requirements, when selecting respirators for IDLH atmospheres SDV Construction, Inc. will provide the following type of respirators at no cost to employees:

- A full face piece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
- A combination full face piece pressure demand supplied-air respirator Self-contained breathing apparatus (SAR) with auxiliary self-contained air supply.

- Provide respirators NIOSH-certified for escape from the atmosphere in which they will be used when they are used only for escape from IDLH atmospheres.

Consider all oxygen-deficient atmospheres to be IDLH. Only NIOSH-certified respirators are selected and used. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

Medical Evaluations

A medical evaluation to determine whether an employee or contractor is able to use a given respirator is an important element of an effective Respiratory Protection Program and is necessary to prevent injuries, illnesses, and even, in rare cases, death from the physiological burden imposed by respirator use.

At SDV Construction, Inc. employees or subcontractors will not be assigned to tasks requiring use of respirators nor fit tested unless it has been determined that they are physically able to perform the work and use the respirator.

All medical questionnaires and examinations are confidential and handled during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire is administered so that the employee understands its content. All employees are provided an opportunity to discuss the questionnaire and examination results with their physician or other licensed health care professional (PLHCP).

Before any initial examination or questionnaire is given, we supply the PLHCP with the following information so that he/she can make the best recommendation concerning an employee's ability to use a respirator:

- Type and weight of the respirator to be used by the employee;
- Duration and frequency of respirator use (including use for rescue and escape);
- Expected physical work effort;
- Additional protective clothing and equipment to be worn;
- Temperature and humidity extremes that may be encountered.

Once the PLHCP determines whether the employee has the ability to use or not use a respirator, he/she sends SDV Construction, Inc. a written recommendation containing only the following information:

- Limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- The need, if any, for follow-up medical evaluations; and
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

Follow-up medical examination:
A follow-up medical examination will be provided if a positive response is given to any question among questions 1 through 8 in Section 2, Part A of Appendix C of 29 CFR 1910.134 or if an employee's initial medical examination demonstrates the need for a follow-up medical examination. Our follow-up medical examination includes tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, our company will provide a powered air-purifying respirator (PAPR) if the PLHCP's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then we are no longer required to provide a PAPR.

Additional medical examinations:
Our company provides additional medical evaluations if:

- An employee reports medical signs or symptoms that are related to ability to use a respirator;
- A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;
- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
- A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

<u>Fit Testing Procedures</u>
All respirators must fit properly to provide protection. If a tight seal is not maintained between the face piece and the employee's face, contaminated air will be drawn into the face piece and be breathed by the employee. Fit testing seeks to protect the employee against breathing contaminated ambient air and is one of the core provisions of our respirator program.
In general, fit testing may be either qualitative or quantitative.

Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If that user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.
In a quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by measuring the amount of leakage into the respirator, either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure the volumetric leak rate. Appropriate instrumentation is required to quantify respirator fit in QNFT.

SDV Construction, Inc. makes sure those employees are fit tested at the following times with the same make, model, style, and size of respirator that will be used:

- Before any of our employees are required to use any respirator with a negative or positive pressure tight-fitting face piece;
- Whenever a different respirator face piece (size, style, model, or make) is used;
- At least annually;

- Whenever the employee reports, or our company, PLHCP, supervisor, or Program Administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight; and
- When the employee, subsequently after passing a QLFT or QNFT, notifies the company, Program Administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable. That employee will be retested with a different respirator face piece.

Employees must pass either the quantitative or qualitative fit test prior to wearing a respirator at the jobsite.

Training

The most thorough respiratory protection program will not be effective if employees do not wear respirators, or if wearing them, do not do so properly. The only way to ensure that our employees are aware of the purpose of wearing respirators, and how they are to be worn is to train them.

Our training program provided by qualified vendors is two-fold; it covers both the:

- Respiratory hazards to which our employees are potentially exposed during routine and emergency situations, and
- Proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

Both training parts are provided prior to requiring an employee to use a respirator in our workplace. Once the respirator has been properly selected and fitted, employees are required to be trained in the use of the respirators they will be using.

Our company will train employees in the following checklist to ensure that proper use procedures include coverage of OSHA requirements:

Face piece Seal Protection

We will train employees that tight-fitting face pieces are not to be worn by employees who have:

- Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function; or
- Any condition that interferes with the face-to-face piece seal or valve function.
- If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.

For all tight-fitting respirators, employees will be trained to perform a user seal check each time they put on the respirator using the procedures in 29 CFR 1910.134 Appendix B-1 (User Seal Check Procedures) or procedures recommended by the respirator manufacturer that you can demonstrate are as effective as those in Appendix B-1.

Continuing Respirator Effectiveness

Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.

Ensure that employees are trained to leave the respirator use area:

- To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or
- If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; or
- To replace the respirator or the filter, cartridge, or canister elements.
- If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, replace or repair the respirator before allowing the employee to return to the work area.

Procedures for working in IDLH Atmospheres

Training concerning IDLH conditions covers the following areas;

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
- The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation;
- Employee(s) located outside the IDLH atmospheres are equipped with:
- Pressure demand or other positive pressure self-contained breathing apparatuses (SCBAs), or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
- Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
- Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

<u>Maintenance and Care Procedures</u>

In order to ensure continuing protection from respiratory protective devices, it is necessary to establish and implement proper maintenance and care procedures and schedules. A lax attitude toward maintenance and care will negate successful selection and fit because the devices will not deliver the assumed protection unless they are kept in good working order.

Cleaning & disinfecting
Our company provides each respirator user with a respirator that is clean, sanitary, and in good working order. We ensure that respirators are cleaned and disinfected after each use.

Storage
Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. We ensure that respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they are packed or stored to prevent deformation of the face piece and exhalation valve. In addition, emergency respirators are kept accessible to the work area; stored in designated areas that are clearly marked as containing emergency respirators; and stored in accordance with any applicable manufacturer instructions.

Inspection
Any one of our respirator inspections includes a check:

- For respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- Of elastomeric parts for pliability and signs of deterioration.
- For self-contained breathing apparatus, in addition to the above, monthly, we maintain air and oxygen cylinders in a fully charged state and recharge when the pressure falls to 90% of the manufacturer's recommended pressure level and determine that the regulator and warning devices function properly.

Repairs
Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator;

Repairs must be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and

Reducing and admission valves, regulators, and alarms must be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

Discarding of respirators
Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded.

Filters, Cartridges, and Canisters:
Ensure that all filters, cartridges and canisters used in the workplace are labeled and color-coded with the NIOSH approval label and that the label is not removed and remains legible.

Scaffolding Safety Program

Purpose

It is SDV Construction, Inc. purpose in issuing these procedures to further ensure a safe workplace based on the following formal, written procedures for scaffold work. These procedures will be reviewed and updated as needed to comply with new OSHA regulations, new best practices in scaffolding, and as business practices demand. Our Safety Officer is the plan coordinator and is responsible for its implementation.

This general scaffold plan applies to

- All employees who perform work while on a scaffold.
- All employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds.
- All scaffolds on all sites where SDV Construction, Inc. is doing work.

General Requirements

Scaffold erection, site preparation, access to the working platform, fall protection, and employee training are vital requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when employees are concentrating on their work and not particularly aware of the hazards of working from scaffolds. Our competent person will inspect all scaffolds and scaffold components for visible defects before each work shift, and after any occurrence that could affect a scaffold's structural integrity. However, in addition to that, all users of scaffolds in this company will know and understand the following safety rules:

- Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.
- Debris must not be allowed to accumulate on platforms.
- A competent person before each work shift, and after any occurrence, which could affect a scaffold's structural integrity, shall inspect scaffolds and scaffold components for visible defects.
- Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately repaired or replaced, braced to meet those provisions, or removed from service, tagged "Damaged Do Not Use" until repaired.
- Scaffolds shall not be moved horizontally while employees are on them, unless a registered professional engineer specifically for such movement or, for mobile scaffolds has designed them, where the provisions of §1926.452(w) are followed.
- Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration.
- Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.

Scaffold Erection

The following general requirements apply to all scaffolds in use by SDV Construction, Inc. employees or subcontractor employees;

- Each scaffold and scaffold component we use will support, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
- Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports
- Each scaffold plank will be installed so that the space between adjacent planks and the space between the platform and uprights is no more than one inch wide.
- Except for outrigger scaffolds (3 inches) and plastering and lathing operations (18 inches), the front edge of all platforms will not be more than 14 inches from the face of the work, unless we have a guardrail or personal fall arrest system in place that meets regulations.
- Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means.
- Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the user. Scaffold components manufactured by different manufacturers shall not be modified in order to inter-mix them unless a competent person determines the resulting scaffold is structurally sound.

Site Preparation

In order for a scaffold to be erected safety the site should be prepared properly for scaffold placement. The following requirements assist in our scaffolds being erected safely for employees and subcontractors;

- Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation. Base should be level and if necessary shovels or heavy equipment will be used to level ground and create a firm foundation.
- Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.
- Unstable objects shall not be used to support scaffolds or platform units or be used as a work platform. (etc: Blocks and Bricks)

Gaining Access to Scaffolds

We know that getting to the working platform is critical to the safety of our employees. This section outlines the mechanical requirements for gaining access to scaffold platforms. When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access we may use one of the following;

- Portable ladders
- Hook-on ladders
- Attachable ladders
- Stair towers (scaffold stairways/towers)

- Stairway-type ladders (such as ladder stands)
- Integral prefabricated scaffold
- Direct access from another scaffold, structure, personnel hoist, or similar surface shall be used.
-

**** Cross braces shall not be used as a means of access.***

SDV Construction, Inc. shall provide safe means of access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. We shall have a competent person determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled. Stairways or ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use

<u>Fall Protection</u>
Fall protection planning is critical to the safety and well being of our employees. Our scaffold fall protection plan follows the OSHA requirements that are different depending on the type of scaffold we are using. We know we must provide fall protection for any employee on a scaffold more than 10 feet above a lower level.

*Most scaffolds that we use are typical frame scaffolds. Each employee on a frame scaffold shall be protected by a guardrail system with minimum 200 pound top rail capacity, 150 pound mid rail capacity and a toe board with a 50 pound capacity.

The following requirements apply to suspended scaffolds;

- When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion.
- Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.
- When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.
- When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.
- Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

Mobile Scaffolds

SDV Construction, Inc. does not allow the usage of mobile scaffolds on our jobsites. If there is not another feasible solution to complete a task, permission from SDV Construction Safety officer or designated person is required.

Training

It is critical that employees who use scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Recognizing the need for training for employees who: (1) perform work while on scaffolds, (2) are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds, and (3) have lost the requisite proficiency, the following training syllabus is a part of this written safety plan.

Employees Who Use Scaffolds:

Our employees who perform work on scaffolds will be trained by a competent person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training will include the following areas as applicable:

- The nature of and the correct procedures for dealing with electrical hazards.
- The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.
- The proper use of the scaffold, and the proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.
- Any other pertinent requirements of the OSHA rules.

Employees who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds:

Our employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds will be trained by a competent person to recognize the hazards associated with the work being done. The training will include the following topics as applicable:

- The nature of scaffold hazards.
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
- The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- Any other pertinent requirements of this subpart.

Employees Who Need Retraining:

When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, we will re-train the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the employee has not been previously trained.
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.

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

Stairways and Ladder Safety Program

Purpose

This written Stairway and Ladder Safety Plan describes methods and practices for care and use of stairways and ladders that can be read and understood by all supervisors and employees here at SDV Construction. This written plan is intended to be used to:

- Create an awareness of the hazards among our workforce.
- Standardize procedures for use and care of the equipment.
- Provide a consistent format for training employees on the proper procedures to be used.
- Minimize the possibility of injury or harm to our employees.
- Demonstrate SDV Construction compliance with stairway and ladder requirements in Subpart X of 29 CFR 1926.

The procedures establish guidelines to be followed whenever an employee works with stairways and ladders at our company.

Stairways

Stairways may be provided at some of our jobsites in the following circumstances:

- For access from one structure level to another where operations necessitate regular travel between levels,
- For access to operating platforms which requires attention routinely during construction activities
- Where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose employees to acids, caustics, gases, or other harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required.

All stairways are provided according to OSHA specifications for stair strength, stair width, angle of stairway rise, stair treads, stairway platforms, railings and handrails, and vertical clearance.

Portable Ladders

All portable ladders provided by SDV Construction for use by employees are constructed according to OSHA specifications in order to insure safety under normal conditions of usage.

Portable ladders chosen for use by SDV Construction are:

- Designed without structural defects or accident hazards such as sharp edges, burrs, etc!
- Designed of sufficient strength to meet the test requirements!
- Protected against corrosion unless inherently corrosion-resistant!

Safe Work Practices

- When ascending or descending, the climber must face the ladder.
- All Load Capacities must be followed per manufacturer recommendations.
- Portable ladders are designed as a one-man working ladder based on a manufacturer requirements and will be used accordingly.

- Portable rung and cleat ladders will be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter (4 to 1) of the working length of the ladder (the length along the ladder between the foot and the top support).
- The ladder will be so placed as to prevent slipping, or it will be lashed, or held in position. The ladder base section must be placed with a secure footing.
- Employees will equip all portable rung ladders with nonslip bases when there is a hazard of slipping. However, nonslip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used on oily, metal, concrete, or slippery surfaces.
- The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment.
- On two-section extension ladders, the minimum overlap for the two sections in use will be according to OSHA specifications.
- Portable rung ladders with reinforced rails will be used only with the metal reinforcement on the underside.
- The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing.
- Extension Ladders will be placed at least 36" above the landing area.

Ladders will not be:

- Used in a horizontal position as platforms, runways, or scaffolds.
- Placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
- Placed on boxes, barrels, or other unstable bases to obtain additional height.
- Tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.
- Used to gain access to a roof unless the top of the ladder extends at least 3 feet above the point of support, at eave, gutter, or roofline.
- Ladders for which dimensions are specified should not be used by more than one man at a time or with ladder jacks and scaffold planks where use by more than one man is anticipated.
- Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment must not be used. Employees finding ladders with any of these conditions must report them to their superintendent. Improvised repairs may not be made.
- Ladders made by fastening cleats across a single rail will not be used.
- All ladders will be uniformly spaced per manufacturer.
- Tops of the ordinary types of stepladders will not be used as steps.
- Middle and top sections of sectional or window cleaner's ladders will not be used for bottom section unless the user equips them with safety shoes.

<u>Inspections and Maintenance</u>

- All Stairways and Ladders will be inspected prior to each use by the employees to insure safety and serviceability.
- Stairways and Ladders will be maintained in good usable condition at all times.
- The joint between the steps and side rails is kept tight, all hardware and fittings are securely attached, and the movable parts operate freely without binding or undue play.
- Metal bearings of locks, wheels, pulleys, etc., will be frequently lubricated.

- Safety feet and other auxiliary equipment will be kept in good condition to insure proper performance.
- Ladders which have developed defects will be withdrawn from service for repair or destruction and tagged or marked as ***Dangerous, Do Not Use*.**

If ladders tip over the superintendent will:

- Inspect the ladder for side rails dents or bends, or excessively dented rungs!
- Check all rung-to-side-rail connections!
- Check hardware connections!
- Check rivets for damage!

If ladders are exposed to oil and grease, equipment will be cleaned and kept free of oil, grease, or slippery materials.

Employee Training

For all employees who work on stairways and ladders, training is provided. Our Safety Officer is responsible for coordinating ladder safety training. Training is conducted by our Safety Officer or designated Safety Consultant/Company. Training is documented and records are available on request.

Elements included in the training program include;

- OSHA Stairway and Ladder Standards
- Safe work practices
- Inspection and Maintenance
- Requirements of this written plan.

Disciplinary Procedures

Constant awareness of and respect for stairway and ladder safety procedures and compliance with all safety rules are considered conditions of employment. SDV Construction reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this stairway and ladder safety program.

Steel Erection Safety Program

Purpose

This section sets forth requirements to protect employees from the hazards associated with steel erection activities involved in the construction, alteration, and/or repair of single and multi-story buildings, bridges, and other structures where steel erection occurs. The requirements of this section apply to employees engaged in steel erection unless otherwise specified. This section does not cover electrical transmission towers, communication and broadcast towers, or tanks.

Steel erection activities include hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing and rigging structural steel, steel joists and metal buildings; installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron and similar materials; and moving point-to-point while performing these activities.

Hoisting & Rigging

Material

Hoisting and Rigging shall be in accordance with the Hoisting & Rigging section of this plan. In addition the following shall apply:

- Cranes being used in steel erection activities shall be visually inspected prior to each shift by a competent person; the inspection shall include observation for deficiencies during operation. At a minimum this inspection shall include the following:
- All control mechanisms for maladjustments; Control and drive mechanism for excessive wear of components and contamination by lubricants, water or other foreign matter; Safety devices, including but not limited to boom angle indicators, boom stops, boom kick out devices, anti-two block devices, and load moment indicators where required;
- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation; Hooks and latches for deformation, chemical damage, cracks, or wear; Wire rope revving for compliance with hoisting equipment manufacturer's specifications; Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation; Hydraulic system for proper fluid level; Tires for proper inflation and condition;
- Ground conditions around the hoisting equipment for proper support, including ground settling under and around outriggers, ground water accumulation, or similar conditions; The hoisting equipment for level position; and
- The hoisting equipment shall be set in a level position after each move and setup.

Inspection

If during an inspection any deficiency is identified, an immediate determination shall be made by the competent person as to whether the deficiency constitutes a hazard. If the deficiency is determined to constitute a hazard, the hoisting equipment shall be removed from service until the deficiency has been corrected.

The operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle loads until safety has been assured.

A qualified rigger (a rigger who is also a qualified person) shall inspect the rigging prior to each shift in accordance with § 1926.251.

Hoisting Employees
The headache ball, hook or load shall not be used to transport personnel. Cranes or derricks may be used to hoist employees on a personnel platform when work is being conducted, provided that all provisions of § 1926.550 (except for § 1926.550(g) (2)) are met.

Working under loads
Routes for suspended loads shall be pre-planned to ensure that no employee is required to work directly below a suspended load except for:

Employees engaged in the initial connection of the steel; or Employees necessary for the hooking or unhooking of the load.

When working under suspended loads, the following criteria shall be met:

Materials being hoisted shall be rigged to prevent unintentional displacement; Hooks with self-closing safety latches or their equivalent shall be used to prevent components from slipping out of the hook; and all loads shall be rigged by a qualified rigger

Multiple lift rigging procedure
A multiple lift shall only be performed if the following criteria are met:

- A multiple lift rigging assembly is used; a maximum of five members are hoisted per lift;
- Only beams and similar structural members are lifted; and All employees engaged in the multiple lift have been trained in these procedures in accordance with § 1926.761(c) (1).
- No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.
- Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5 to 1 safety factor for all components.

The total load shall not exceed:

- The rated capacity of the hoisting equipment specified in the hoisting equipment load charts; the rigging capacity specified in the rigging rating chart. The multiple lift rigging assembly shall be rigged with members: Attached at their center of gravity and maintained reasonably level; Rigged from top down; and Rigged at least 7 feet (2.1 m) apart. The members on the multiple lift rigging assembly shall be set from the bottom up. Controlled load lowering shall be used whenever the load is over the connectors. Structural stability shall be maintained at all times during the erection process.

The following additional requirements shall apply for multi-story structures:

- The permanent floors shall be installed as the erection of structural member’s progress, and there shall be not more than eight stories between the erection floor and the upper-most permanent floor, except where the structural integrity is maintained as a result of the design. At no time shall there be more than four floors or 48 feet (14.6 m), whichever is less, of

unfinished bolting or welding above the foundation or uppermost permanently secured floor, except where the structural integrity is maintained as a result of the design.

- A fully planked or decked floor or nets shall be maintained within two stories or 30 feet (9.1 m), whichever is less, directly under any erection work being performed.

Walking/working surfaces

Tripping hazards. Shear connectors (such as headed steel studs, steel bars or steel lugs), reinforcing bars, deformed anchors or threaded studs shall not be attached to the top flanges of beams, joists or beam attachments so that they project vertically from or horizontally across the top flange of the member until after the metal decking, or other walking/working surface, has been installed.

Installation of shear connectors on composite floors, roofs and bridge decks.

When shear connectors are used in construction of composite floors, roofs and bridge decks, employees shall lay out and install the shear connectors after the metal decking has been installed, using the metal decking as a working platform. Shear connectors shall not be installed from within a controlled decking zone (CDZ), as specified in § 1926.760(c) (8).

Slip resistance of metal decking

Slip resistance of skeletal structural steel. Workers shall not be permitted to walk the top surface of any structural steel member installed that has been coated with paint or similar material unless documentation or certification that the coating has achieved a minimum average slip resistance of .50 when measured with an English XL tribometer or equivalent tester on a wetted surface at a testing laboratory is provided. Such documentation or certification shall be based on the appropriate ASTM standard test method conducted by a laboratory capable of performing the test. The results shall be available at the site and to the steel erector.

Plumbing-up

When deemed necessary by a competent person, plumbing-up equipment shall be installed in conjunction with the steel erection process to ensure the stability of the structure.

When used, plumbing-up equipment shall be in place and properly installed before the structure is loaded with construction material such as loads of joists, bundles of decking or bundles of bridging.

Plumbing-up equipment shall be removed only with the approval of a competent person.

Metal decking

Hoisting, landing and placing of metal decking bundles.

Bundle packaging and strapping shall not be used for hoisting unless specifically designed for that purpose.

If loose items such as dunnage, flashing, or other materials are placed on the top of metal decking bundles to be hoisted, such items shall be secured to the bundles. Bundles of metal decking on joists shall be landed in accordance with § 1926.757(e) (4). Metal decking bundles shall be landed on framing members so that enough support is provided to allow the bundles to be un-banded without dislodging the bundles from the supports. At the end of the shift or when environmental or jobsite conditions require, metal decking shall be secured against displacement.

Roof and floor holes and openings

Metal decking at roof and floor holes and openings shall be installed as follows:

- Framed metal deck openings shall have structural members turned down to allow continuous deck installation except where not allowed by structural design constraints or constructability.
- Roof and floor holes and openings shall be decked over. Where large size, configuration or other structural design does not allow openings to be decked over (such as elevator shafts, stair wells, etc.) employees shall be protected in accordance with § 1926.760(a) (1).
- Metal decking holes and openings shall not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to fulfill its specific use.
- Covering roof and floor openings
- Covers for roof and floor openings shall be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time.
- All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.
- All covers shall be painted with high-visibility paint or shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.
- Smoke dome or skylight fixtures that have been installed are not considered covers for the purpose of this section unless they meet the strength requirements of this section.
- Decking gaps around columns. Wire mesh, exterior plywood, or equivalent, shall be installed around columns where planks or metal decking do not fit tightly. The materials used must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

Installation of metal decking

Except as provided in § 1926.760(c), metal decking shall be laid tightly and immediately secured upon placement to prevent accidental movement or displacement.

During initial placement, metal decking panels shall be placed to ensure full support by structural members.

Derrick floors

A derrick floor shall be fully decked and/or planked and the steel member connections completed to support the intended floor loading. Temporary loads placed on a derrick floor shall be distributed over the underlying support members so as to prevent local overloading of the deck material.

General requirements for erection stability

All columns shall be anchored by a minimum of 4 anchor rods (anchor bolts). Each column anchor rod (anchor bolt) assembly, including the column-to-base plate weld and the column foundation, shall be designed to resist a minimum eccentric gravity load of 300 pounds (136.2 kg) located 18 inches (.46m) from the extreme outer face of the column in each direction at the top of the column shaft. Columns shall be set on level finished floors, pre-grouted leveling plates, leveling nuts, or shim packs which are adequate to transfer the construction loads.

All columns shall be evaluated by a competent person to determine whether guying or bracing is needed; if guying or bracing is needed, it shall be installed.

Repair, replacement or field modification of anchor rods (anchor bolts)
Anchor rods (anchor bolts) shall not be repaired, replaced or field-modified without the approval of the project structural engineer of record. Prior to the erection of a column, the controlling contractor shall provide written notification to the steel erector if there has been any repair, replacement or modification of the anchor rods (anchor bolts) of that column.

Beams and Columns
During the final placing of solid web structural members, the load shall not be released from the hoisting line until the members are secured with at least two bolts per connection, of the same size and strength as shown in the erection drawings, drawn up wrench-tight or the equivalent as specified by the project structural engineer of record.

A competent person shall determine if more than two bolts are necessary to ensure the stability of cantilevered members; if additional bolts are needed, they shall be installed.

Diagonal bracing
Solid web structural members used as diagonal bracing shall be secured by at least one bolt per connection drawn up wrench-tight or the equivalent as specified by the project structural engineer of record.

Double connections at columns and/or at beam webs over a column. When two structural members on opposite sides of a column web, or a beam web over a column, are connected sharing common connection holes, at least one bolt with its wrench-tight nut shall remain connected to the first member unless a shop-attached or field-attached seat or equivalent connection device is supplied with the member to secure the first member and prevent the column from being displaced.

If a seat or equivalent device is used, the seat (or device) shall be designed to support the load during the double connection process. It shall be adequately bolted or welded to both a supporting member and the first member before the nuts on the shared bolts are removed to make the double connection.

Column splices
Each column splice shall be designed to resist a minimum eccentric gravity load of 300 pounds (136.2 kg) located 18 inches (.46 m) from the extreme outer face of the column in each direction at the top of the column shaft.

Perimeter columns
Perimeter columns shall not be erected unless:
The perimeter columns extend a minimum of 48 inches (1.2 m) above the finished floor to permit installation of perimeter safety cables prior to erection of the next tier, except where constructability does not allow; The perimeter columns have holes or other devices in or attached to perimeter columns at 42-45 inches (107-114 cm) above the finished floor and the midpoint between the finished floor and the top cable to permit installation of perimeter safety cables required by § 1926.760(a)(2), except where constructability does not allow.

Steel Joists

Where steel joists are used and columns are not framed in at least two directions with solid web structural steel members, a steel joist shall be field-bolted at the column to provide lateral stability to the column during erection. For the installation of this joist:

A vertical stabilizer plate shall be provided on each column for steel joists. The plate shall be a minimum of 6 inch by 6 inch (152 mm by 152 mm) and shall extend at least 3 inches (76 mm) below the bottom chord of the joist with a $^{13}/_{16}$ inch (21 mm) hole to provide an attachment point for guying or plumbing cables. The bottom chords of steel joists at columns shall be stabilized to prevent rotation during erection. Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted, and each end of the bottom chord is restrained by the column stabilizer plate.

Where constructability does not allow a steel joist to be installed at the column: an alternate means of stabilizing joists shall be installed on both sides near the column and shall; provide equivalent stability; be designed by a qualified person; be shop installed; and be included in the erection drawings.

Hoisting cables shall not be released until the seat at each end of the steel joist is field-bolted and the joist is stabilized. Where steel joists at or near columns span 60 feet (18.3 m) or less, the joist shall be designed with sufficient strength to allow one employee to release the hoisting cable without the need for erection bridging.

Where steel joists at or near columns span more than 60 feet (18.3 m), the joists shall be set in tandem with all bridging installed unless an alternative method of erection, which provides equivalent stability to the steel joist, is designed by a qualified person and is included in the site-specific erection plan. A steel joist or steel joist girder shall not be placed on any support structure unless such structure is stabilized.

When steel joist(s) are landed on a structure, they shall be secured to prevent unintentional displacement prior to installation.

No modification that affects the strength of a steel joist or steel joist girder shall be made without the approval of the project structural engineer of record.

Field-bolted joists

Except for steel joists that have been pre-assembled into panels, connections of individual steel joists to steel structures in bays of 40 feet (12.2 m) or more shall be fabricated to allow for field bolting during erection. These connections shall be field-bolted unless constructability does not allow.

Steel joists and steel joist girders shall not be used as anchorage points for a fall arrest system unless written approval to do so is obtained from a qualified person.

Attachment of steel joists and steel joist girders

Each end of "K" series steel joists shall be attached to the support structure with a minimum of two $^{1/8}$-inch (3 mm) fillet welds 1 inch (25 mm) long or with two $^{1/2}$-inch (13 mm) bolts, or the equivalent.

Each end of "LH" and "DLH" series steel joists and steel joist girders shall be attached to the support structure with a minimum of two $^{1/4}$-inch (6 mm) fillet welds 2 inches (51 mm) long, or with two $^{3/4}$-inch (19 mm) bolts, or the equivalent.

Each steel joist shall be attached to the support structure, at least at one end on both sides of the seat, immediately upon placement in the final erection position and before additional joists are placed.

Panels that have been pre-assembled from steel joists with bridging shall be attached to the structure at each corner before the hoisting cables are released.

Landing and placing loads

During the construction period, the employer placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist.

No construction loads are allowed on the steel joists until all bridging is installed and anchored and all joist-bearing ends are attached.

The weight of a bundle of joist bridging shall not exceed a total of 1,000 pounds (454 kg). A bundle of joist bridging shall be placed on a minimum of three steel joists that are secured at one end. The edge of the bridging bundle shall be positioned within 1 foot (.30 m) of the secured end.

No bundle of decking may be placed on steel joists until all bridging has been installed and anchored and all joist bearing ends attached, unless all of the following conditions are met:

The employer has first determined from a qualified person and documented in a site-specific erection plan that the structure or portion of the structure is capable of supporting the load; The bundle of decking is placed on a minimum of three steel joists; The joists supporting the bundle of decking are attached at both ends;

At least one row of bridging is installed and anchored; the total weight of the bundle of decking does not exceed 4,000 pounds (1816 kg); and Placement of the bundle of decking shall be in accordance with paragraph (e) (5) of this section. 1926.757(e) (5)

Falling Object Protection

Securing loose items aloft: All materials, equipment, and tools, which are not in use while aloft, shall be secured against accidental displacement. Protection from falling objects other than materials being hoisted: The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided.

Fall Protection

Fall Protection shall be in accordance with the Fall Protection section of this plan. In addition the following shall apply:

Each employee engaged in a steel erection activity that is on a walking/working surface with an unprotected side or edge more than 15 feet (4.6 m) above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

Perimeter safety cables. On multi-story structures, perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed. Connectors and employees working in controlled decking zones shall be protected from fall hazards.

Connectors

Each connector shall be protected from fall hazards of more than two stories or 30 feet (9.1 m) above a lower level, whichever is less; Have completed connector training in accordance with § 1926.761; and be provided, at heights over 15 and up to 30 feet above a lower level, with a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be able to be tied off; or be provided with other means of protection from fall hazards in accordance with paragraph (a)(1) of section. 1926.760(c)

Controlled Decking Zone (CDZ)

A controlled decking zone may be established in that area of the structure over 15 and up to 30 feet above a lower level where metal decking is initially being installed and forms the leading edge of a work area. In each CDZ, the following shall apply:

Each employee working at the leading edge in a CDZ shall be protected from fall hazards of more than two stories or 30 feet (9.1 m), whichever is less.

Access to a CDZ shall be limited to only those employees engaged in leading edge work.

The boundaries of a CDZ shall be designated and clearly marked. The CDZ shall not be more than 90 feet (27.4 m) wide and 90 (27.4 m) feet deep from any leading edge. The CDZ shall be marked by the use of control lines or the equivalent.

Each employee working in a CDZ shall have completed CDZ training in accordance with § 1926.761.

Unsecured decking in a CDZ shall not exceed 3,000 square feet (914.4 m^2).

Safety deck attachments shall be performed in the CDZ from the leading edge back to the control line and shall have at least two attachments for each metal decking panel.

Final deck attachments and installation of shear connectors shall not be performed in the CDZ.

Criteria for fall protection equipment
Guardrail systems, safety net systems, personal fall arrest systems, positioning device systems and their components shall conform to the criteria in § 1926.502

Fall arrest system components shall be used in fall restraint systems and shall conform to the criteria in § 1926.502 (see Appendix G). Either body belts or body harnesses shall be used in fall restraint systems. Perimeter safety cables shall meet the criteria for guardrail systems in § 1926.502 (see Appendix G).

Custody of fall protection
Fall protection provided by the steel erector shall remain in the area where steel erection activity has been completed, to be used by other trades, only if the controlling contractor or its authorized representative:

Has directed the steel erector to leave the fall protection in place; and has inspected and accepted control and responsibility of the fall protection prior to authorizing persons other than steel erectors to work in the area.

Training
Training personnel - Training required by this section shall be provided by a qualified person(s).

Fall hazard training. The employer shall provide a training program for all employees exposed to fall hazards. The program shall include training and instruction in the following areas:

The recognition and identification of fall hazards in the work area; The use and operation of guardrail systems (including perimeter safety cable systems), personal fall arrest systems, positioning device systems, fall restraint systems, safety net systems, and other protection to be used; The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used; The procedures to be followed to prevent falls to lower levels and through or into holes and openings in walking/working surfaces and walls; and The fall protection requirements of this section.

Special training programs:
In addition to the training required in the previous paragraphs of this section, the employer shall provide special training to employees engaged in the following activities:

Multiple lift rigging procedure. The employer shall ensure that each employee who performs multiple lift rigging has been provided training in the following areas:

The nature of the hazards associated with multiple lifts; and the proper procedures and equipment to perform multiple lifts required by § 1926.753(e).

Connector procedures. The employer shall ensure that each connector has been provided training in the following areas:

The nature of the hazards associated with connecting; and the establishment, access, proper connecting techniques and work practices required by § 1926.756(c) and § 1926.760(b).

Controlled Decking Zone Procedures. Where CDZs are being used, the employer shall assure that each employee has been provided training in the following areas:

The nature of the hazards associated with work within a controlled decking zone; and The establishment, access, proper installation techniques and work practices required by § 1926.760(c) and § 1926.754(e).

Suspension of Work

A. All employees, contractors, and visitors have the responsibility and authority to suspend inappropriate or unsafe work activities when those activities present clear and imminent danger to employees, contractors, visitors, the public, or the environment. Personnel may suspend activities they observe or in which they are a participant, if they believe the activity presents an imminent danger.

B. Upon receiving suspension of work request (oral or written), immediately cease activity, and notify the Onsite Superintendent or Project Manager. Obtain name and telephone number of person requesting suspension, and reason for suspension of work. Work shall not continue on that activity until the issue has been resolved.

C. Stop Work Order: A Stop Work Order that affects a crew for a period greater than one (1) hour shall be followed by issuance of formal written Stop Work Order. Work may be restarted only with a written work release from the Superintendent or Project Manager. Stop Work Order shall include the following information:

    1. Date and time when work was stopped.
    2. Reason for work stoppage.
    3. Requirements for Contractor to resume work.
    4. Date and time of when to expect corrective actions to be completed, if required.

D. Work Release: Superintendent or Project Managers shall provide a written work release that includes the following:

    1. Reference Stop Work Order
    2. Reason for work stoppage
    3. Conditions for restart of activity.
    4. Specified date and time when work may resume.

Vehicle Policy

Company owned vehicles are the property of SDV Construction Inc and are "loaned" to each employee, and should be treated as such. The same respect that you give a vehicle "borrowed" from a family member or a close friend should be given to your "loaned" vehicle. Any action or attitude considered irresponsible can be grounds for losing your privileges to use the vehicle.

Only authorized individuals are allowed to drive SDV vehicles. All employees will have a valid driver's license and it will be verified by our insurance company prior to vehicle operation.

Each vehicle is "loaned" with certain responsibilities and accountability attached. The company expects value from each of you for the benefit of driving a company vehicle. If the company feels that it is not receiving value for this privilege then you could lose your vehicle privileges. Management reserves the right to terminate employment based on adherence to the following rules and policy.

The assigned vehicle is not a right, it is a privilege. The vehicle may be removed at any time should the management feel necessary.

Remember a vehicle with SDV Construction printed on it is a "rolling billboard." It should always be used and presented in such a manner as to bring positive attention to SDV Construction. Failure to do so may be cause for termination of your privileges.

Company owned vehicles and/or those used by company employees will be operated in a safe and economical manner.

The rules and expectations are as follows:

Rules:

1. Driving while under the influence of alcohol or Illegal substances is not permitted.
2. Driving with open containers of alcoholic beverage (or like substance) in a company vehicle is prohibited (even if the container is empty in the bed of the vehicle).
3. Using any type of tobacco products in company vehicles is prohibited.
4. Driving your company vehicle to or from any establishment which serves liquor as a major source of its income is prohibited (bars, lounges, casinos, night clubs, bingo parlors etc.)
5. Carrying weapons in a company vehicle is strictly prohibited.
6. Having a person, other than the person to whom the truck is assigned, drive the vehicle outside of working hours is prohibited, this includes family members.
7. Having an un-licensed or uninsured person drive the vehicle, during or after working hours, is prohibited.
8. The use of the vehicle, outside of working hours for a task, which might or does cause it damage or undue wear and tear, is prohibited.
9. Every vehicle "on the road" must be safe and functional. Knowingly operating an unsafe vehicle is prohibited.

10. All persons issued a vehicle must maintain a clean driving record and be insurable. You must also show proof of insurance on your personal vehicles.
11. Seat belts must be worn by all people in a vehicle during it's' operation.
12. All traffic violations received while operating the assigned vehicle will be paid by the employee and must be reported immediately to your supervisor.
13. Cargo will be secured and all doors locked while en route and while the vehicle is parked.
14. Hitchhikers are not permitted.
15. All loads must be secured properly and not exceed manufactures load limits. All loads must be placed on appropriately sized vehicles intended for that use.
16. Cell Phone use is prohibited while operating SDV Vehicle.

Policy:

1. The vehicle is not intended to be a primary source of transportation and will not be used as such.
2. The vehicle will not be used for ordinary transportation needs on the weekends or non-working hours.
3. Any use of the vehicle for things other than those specifically related to SDV Construction Inc business must be approved by Kirk or Jerry.
4. Damage caused to a vehicle and/or anything it is towing or hauling while off of a job site, or during travel that is not specifically job related may be charged to the individual driving the vehicle (accidents driving to and from work, etc.). The time it takes the employee to get the damage fixed, if required, shall not be at the company's expense. (i.e., fixing a flat, broken windshield, etc.)
5. It is the responsibility of the employee to whom the truck has been issued to regularly wash the vehicle (inside and out) and to maintain the vehicle through the company maintenance program. Maintenance should occur every 5,000 miles or as directed.
6. It may be necessary for the vehicle to be pulled in for maintenance or repairs. During that time SDV Construction will try to provide an "adequate" replacement. However, an "adequate" replacement is not always available. During those times, any replacement will do – if it is not suited to be used for anything else other than on the job, then that is all that is required.
7. If an employee knowingly operated a vehicle that is unsafe, or in need of repair, and delays repairs, which in turn causes damages which cost more, than that cost will be borne by the person to who the vehicle is assigned.
8. The vehicle may be used to run errands and stops, directly before and after working hours, in transit to your residence.
9. Cost over and above those normally associated with the operation and use of a company vehicle, which are deemed to be caused by the person assigned the vehicle, may be charged to the person who is assigned the vehicle.
10. Drivers witnessed or reported as driving fast or recklessly may lose their privileges.
11. When a driver goes on vacation, the company vehicle will be parked in the yard at the main office and the keys left in the office. This allows the company to make use of the vehicle during a driver's absence.
12. Foremen working on out of town jobs may need to deliver their vehicle to the main office prior to their departure on vacation, time off, etc. This will be determined by whether or not the company requires the use of that vehicle during a driver's absence.

13. The use of radar detectors is prohibited in all vehicles owned or used by the company. Obey all speed limits.
14. Report all accidents immediately and complete a Vehicle Accident form.

_____ _____

Print Name Signature

_____

Date

Welding & Cutting Program

Purpose

These written Welding & Cutting Procedures establish guidelines to be followed whenever any of our employees work with welding and cutting equipment at this company. The procedures here establish uniform requirements designed to ensure that welding and cutting safety training, operation, and maintenance practices are communicated to and understood by the affected employees. These requirements also are designed to ensure that procedures are in place to safeguard the health and safety of all employees.

It is our intent to comply with the requirements of 29 CFR 1926.350 through .354. These regulations have requirements for welding and cutting operations.

General Safety Requirements

- Welding cannot be conducted safely the welding and cutting shall not be performed.
- When objects to be welded or cut cannot readily be moved, all moveable fire hazards should be removed from the area.
- If all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards.
- When hazardous fumes, gases, or dust are possible ventilation shall be made available or respiratory protection may be needed.
- Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks that might drop through the floor. The same precautions shall be observed with regard to cracks or holes in walls, open doorways and open or broken windows.
- Appropriate PPE will be used by all welders for cutting and welding operations.
- Bottles shall be kept in the upright position at all times.

Fire Watch for Welding Activities

- The Fire Watch may only be performed by an individual who is not performing any other duties that would take attention away from the area where the hot work is performed;
- Be aware of the inherent hazards involved in hot work;
- Ensure that safe conditions are maintained during the hot work;
- Ensure that appropriate fire extinguishers are readily available at the job site;
- Know how to report a fire or other emergency situation;
- Using appropriate Personal Protective Equipment (PPE)
- Be trained in campus fire safety procedures and the use of fire extinguishing equipment;
- Must remain in a location that allows immediate communication with the individual(s) performing hot work;
- Watch for fires in all exposed areas for a minimum of thirty (30) minutes.

Fire Protection Equipment

ABC Fire extinguishers will be available at all times during welding operations. It is the responsibility of the fire watch to inspect and make sure extinguishers are operable and ready for use prior to welding activities. All employees who use fire extinguisher are trained in the usage prior to conducting fire watch operations.

Training

Our policy is to permit only trained and authorized personnel to operate welding and cutting equipment.

Initial Training

During training, our program covers the operational hazards of our welding and cutting operations, including:

- Hazards associated with the particular make and model of the welding and cutting equipment;
- Hazards of the workplace; and
- General hazards that apply to the operation of all or most welding and cutting equipment.

Each potential welder or cutter who has received training in any of the elements of our training program for the types of equipment which that employee will be authorized to operate and for the type of workplace in which the welding and cutting equipment will be operated need not be retrained in those elements before initial assignment in our workplace if, Inc has written documentation of the training and if the employee is evaluated to be competent.

Performance Evaluation

Each certified welder or cutter is evaluated to verify that the welder or cutter has retained and uses the knowledge and skills needed to operate safely. If the evaluation shows that the welder or cutter is lacking the appropriate skills and knowledge, the welder or cutter is retrained. When a welder or cutter has an accident or near miss or some unsafe operating procedure is identified, they must be retraining.

Current Welders and Cutters

Under no circumstances may an employee operate welding or cutting equipment until he/she has successfully been evaluated by a competent person.

A list of certified employees and equipment is available upon request.

All employees have a general obligation to work safely with and around welding and cutting operations.

Inspections

Any deficiencies found in our welding and cutting equipment are repaired, or defective parts replaced, before continued use.

However, no modifications or additions that affect the capacity or safe operation of the equipment may be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, must be changed accordingly. In no case may the original safety factor of the equipment be reduced.
While defective parts may be found, we prefer to invest time and effort into the proper upkeep of our equipment, which results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance schedules, and completing the proper records, will also increase our welding and cutting equipment's longevity.

Periodic maintenance (those completed monthly or less frequently) is done by a factory-trained-expert, or a dealer.

Work Site Identification (ASM Bulletin Board)

A. Construction Safety Bulletin Board: Provide and maintain weather tight safety bulletin board in a visible location, not less than 3 feet by 5 feet in size. Bulletin board shall be used only to post official documents and announcements.

1. For projects under $50,000, provide and maintain legible, durable, and weatherproof 8-1/2 inch by 11 inch sign in visible location with the following information:
   a. Company name
   b. Superintendent name
   c. After hours telephone number
   d. Client contact name and telephone number

2. ***For all projects, a copy of Contractor's safety plan and all safety documentation will be readily available at Project site.***

B. Hazard Identification Signage and Barricades: Provide appropriate hazard identification and barricades in accordance with 29 CFR 1926 and 29 CFR 1910 for construction and service work, respectively, to warn Contractor personnel and visitors of specific work hazards. Prior to start of work, ensure personnel on site know and understand signage that may be present on site during performance of work.

1. Use flagging and tape barricades only for temporary (less than 24 hour) protection, unless otherwise accepted by Superintendent. Use orange safety fencing or snow fencing around excavations and trenching. Fencing shall be minimum 4 feet (1.2 m-) high and secured vertically every 10 feet (3 m).

2. Provide signage in compliance with 29 CFR 1926 and 29 CFR 1910 for construction and service work, respectively. Protect unattended sites with applicable signs and barricades at all times.

C. Documentation: The following documents shall be available for review at each Project site.
1. Project plans, specifications, and work authorizations
2. All required permits.
3. Company Safety Plan
4. Material Safety Data Sheets for on-site chemicals.