



KirbyCo Builders

Safety Program

Prepared by:
KirbyCo Builders
in association with:
U.S. Compliance Systems, Inc.

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Disclaimer: This Safety Program has been prepared exclusively for:

KirbyCo Builders

9527 Hood Rd.

Jacksonville, FL 32257

904-281-5050

To the best of our knowledge, the information contained herein is accurate.

U.S. Compliance Systems, Inc. accepts no responsibility for errors or omissions.

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KirbyCo Builders Policy Statements

Safety and Health Policy Statement

It is the policy of KirbyCo Builders to provide a work environment that is inherently safe. The safety and health of our employees is of primary importance as they are our most important resource. Safety takes a commitment from all personnel within our organization.

KirbyCo Builders has developed a comprehensive safety program that addresses specific safety concerns and provides guidance for the performance of our individual job tasks within the framework of appropriate Occupational Safety & Health Administration (OSHA) standards.

All employees will receive interactive safety training using the information contained in this safety program. For this training we may have safety meetings, on-the-job training, on-line courses, formal instruction, and/or any other relevant methods needed.

Safety training needs will be identified by continual reassessment of work methods, equipment, and work stations; as well as employee and management input.

Frequent and regular job site inspections will be conducted by supervisory personnel and/or other competent persons. Employees in violation of the established safety procedures of KirbyCo Builders will be subject to our disciplinary procedures. Observation of unsafe acts will be addressed immediately.

On every job site there will be a competent person, by virtue of training or experience, who will have the authority to stop work. Additionally, all employees have stop work authority for their immediate task if they are aware of a safety hazard that cannot be immediately corrected. If an employee stops work for an unresolved safety hazard, the supervisor will be contacted immediately.

Equipment operator/owner manuals will be readily available and the safety procedures contained therein will be followed. Equipment will be inspected prior to use and, if defective, tagged out of service. Manufacturer's warning labels on all equipment will not be removed, painted over or defaced.

Emergency medical response will be available on every job site either by an emergency rescue service within reasonable distance, by time, or an assigned emergency responder.

Safety requires not only that each person understand and perform individual tasks in a safe manner, but also that each individual is aware of his surroundings and is actively involved in the safety of others.

Each Employee is encouraged to contact their supervisor immediately should a safety or health risk exist so that corrective action may be taken immediately.

This Policy Statement will be conspicuously posted.

Chris Kirby
Safety Director

New Hire Safety Orientation Policy Statement

Chris Kirby, the safety director at KirbyCo Builders, or a designated competent person, will ensure that all new hires are aware of the accessibility of the safety program and, through interactive discussion or practical demonstration, be assured that the new hire understands the safety policies and procedures that pertain to the actual work the new hire will perform.

Further, each new hire will read (or have explained) the contents of our employee handbook and **sign** the Employee Acknowledgement form which states:

I have read and understand the contents of the KirbyCo Builders Employee Handbook.

I will, to the best of my ability, work in a safe manner and follow established work rules and procedures.

I will ask for clarification of safety procedures of which I am not sure **prior** to performing a task.

I will report to the job site supervisor or competent person any unsafe acts or procedures and will ensure they are addressed and resolved before continuing work.

I understand that the complete safety program is located at:

9527 Hood Rd.
Jacksonville, FL 32257
904-281-5050

and is available for my review.

It will be explained to all new hires that safety training and safety performance is an on-going process. Depending on circumstances, training will take the form of some or all of the following: safety meetings, on-the-job instruction, formal and informal training.

Lastly, all new hires will be informed of the importance of the inspection and enforcement policies and procedures of KirbyCo Builders.

Chris Kirby
Safety Director

KirbyCo Builders
Section I
General Policies & Procedures

Standards:

29 CFR 1926.16 - Rules of Construction

29 CFR 1926.20 - General Safety and Health Provisions

29 CFR 1926.21 - Safety Training and Education

29 CFR 1926.34 - Means of Egress

29 CFR 1926.35 - Employee Emergency Action Plans

PART 1904 - Recording and Reporting Occupational Injuries and Illnesses

Safety Program Overview

This comprehensive safety & health training program has been developed to address specific safety concerns of KirbyCo Builders and to provide guidance for the performance of individual job tasks within the framework of appropriate Occupational Safety & Health Administration (OSHA) standards.

Safety demands a commitment from all personnel within KirbyCo Builders. As an employer, we have an obligation to ensure that all our employees are afforded the protection of an appropriate safety & health program.

This program contains policies and procedures to deal with common job site place hazards, specific job-related hazards, and potential hazards that may arise.

Hazard assessment, project pre-planning, and engineering controls, where feasible, will be the preferred method of providing a safe job site. Hazards that remain will be minimized or eliminated through training which provides employees the ability to recognize job site hazards and understand the proper procedural and/or personal protective equipment requirements.

Each employee is encouraged to contact their supervisor immediately should a safety or health risk exist so that corrective action may be taken to eliminate the hazard entirely or deal with the hazard in a safe manner through modified work procedures, PPE, and/or other appropriate action.

On all job sites, at least one person will be designated a “**competent person**” by virtue of experience or training. This person will have the ability to identify work related hazards, know the corrective procedures, and have the responsibility, ability and authority to stop work if the job site cannot be made safe.

Chris Kirby, the safety director at KirbyCo Builders, or a designated competent person will make routine and random job site inspections to both identify new hazards and to monitor the effectiveness of our safety & health program.

In the final analysis, the success of the safety effort by KirbyCo Builders depends on all employees, from senior management to the newest hire, demonstrating a commitment to safety by working in a safe manner. Safe job performance is how our safety effort is ultimately measured.

Accident/Injury Prevention

This safety program is designed so that employees at KirbyCo Builders do not work in conditions that are unsanitary, hazardous, or dangerous to their health or safety.

One lax moment in terms of safety may result in a lifetime of needless pain and suffering. Disregarding safety standards may even be fatal. While an accident may happen in an instant, the consequences may last for years.

Accident prevention requires a commitment from all personnel within KirbyCo Builders to actively participate in our safety program. All personnel should be aware of job site hazards and follow procedures to eliminate these hazards by using proper work methods, use of personal protective equipment, and proper use of tools and equipment. All persons are encouraged to ask questions and make positive suggestions for safety improvement.

Competent persons will be designated to provide job site expertise, as well as regular inspections of equipment, materials, and procedures.

Competent persons will have the authority to stop work if a safety hazard is identified and it cannot be corrected immediately.

All machinery, tools, materials, and equipment deemed unsafe will be taken out of service by physically removing, tagging, or locking controls to render them inoperable.

Only persons qualified by training or experience will be allowed to operate equipment or machinery.

All tools and items of equipment will be used for the purpose for which they were designed. For example, a wrench is not a hammer, a ladder is not a horizontal plank, and a fire extinguisher is not a cooler!

Never take chances or attempt any job without being aware of the proper procedures, the potential safety hazards, and the methods to reduce or eliminate risk.

Company Personnel

The following are descriptions of the different roles and expectations for all personnel of KirbyCo Builders.

Safety Director

The safety director at KirbyCo Builders is Chris Kirby and has overall responsibility for the implementation of our program. Chris Kirby will ensure each employee has appropriate safety training for the tasks to be performed.

Additionally, Chris Kirby will perform hazard assessments of job sites to determine if hazards are present, or are likely to be present, which will necessitate the use of personal protective equipment (PPE).

Identified hazards which cannot be eliminated through engineering controls or changes in procedures will be addressed by the use of selected PPE.

While the responsibilities of Chris Kirby cannot be further delegated, most of the duties can be assigned to those who are competent persons by virtue of training or experience.

Safety Program Administrator

Chris Kirby, the safety program administrator, has been deemed competent by our Safety Director and may perform the below duties:

- a. The actual training of personnel.
- b. Maintenance of training records.
- c. Random inspections to verify adherence to safety rules and policies.
- d. Completion of specific tasks identified within our OSHA compliance programs.
- e. Hazard assessments.

Note: The safety director and the safety program administrator may or may not be the same person.

Employees

All employees are required to participate actively in the safety & health program at KirbyCo Builders. Do not hesitate to point out perceived safety deficiencies to your supervisor or the competent person – you may prevent an injury to yourself or a fellow worker. With the goal of providing a safer job site for all of us, employee suggestions for improving safety management are welcomed and encouraged. Never perform a task when you don't understand all of the safety procedures. If in doubt, ask your immediate supervisor for guidance.

Subcontractor Involvement & Responsibilities

It is the responsibility of KirbyCo Builders to review the safety efforts made by subcontractors who may be working with us.

Prior to initiation of work on multi-subcontractor job sites, a meeting will be held to explain to all subcontractors the protective measures we have determined to be appropriate. Input and suggestions from subcontractors will be solicited. Attention will be given to hazards one subcontractor may create and the measures they will take to prevent other subcontractors from these exposures. One measure that will always be taken is the sharing of appropriate Safety Data Sheet information.

The four major elements of safety management below apply to the operations of KirbyCo Builders and they also apply to our subcontractors:

- a. Management commitment and employee involvement.
- b. Worksite analysis.
- c. Hazard prevention and control.
- d. Safety & health training.

It is expected that our subcontractors work within the framework of OSHA Standards.

Safety Meetings

Scheduled safety meetings provide an opportunity for reinforcing the importance of general safety as well as specific work related procedures applicable to the work at hand. Properly prepared safety meetings will focus on one or two topics and be direct and to the point. All safety questions will be addressed and interactive participation is encouraged.

Housekeeping

Housekeeping? On a job site? What's that all about? It's about safety!

Employees are to maintain a neat and orderly work area *as far as practical*. Housekeeping and general cleanliness have a direct effect on safety and health. Proper housekeeping can prevent slips and falls, allow easy egress in the event of an emergency, prevent falling object injuries, and enhance fire safety. Below listed are general housekeeping rules:

- a. Walking/working surfaces shall be kept clean and dry.
- b. Do not allow construction debris to accumulate.
- c. Stored materials will be neatly stacked at the job site.
- d. Containers, when not in use, will be sealed.
- e. No objects will be left unattended on stairways.
- f. Entrances and exits will be properly marked and not blocked.
- g. Tools shall be properly cleaned and put away after use.

Sanitation

29 CFR 1926.51 - Sanitation

Potable Water:

From a safety standpoint, you must not neglect your need for potable (drinkable) fluids. Water is not only the most abundant of all compounds found on the earth; it is the most abundant part of you – actually about 65% of you is water.

On construction sites, exertion and heat dictate the need for plenty of water.

Potable water will be available on job sites. If portable containers are used, they will be clearly marked (Potable Water), capable of being tightly closed, and equipped with a tap. These containers will be used for no other purpose than supplying drinking water. Non-reusable (single service) cups in a sanitary container will be provided for drinking as well as a receptacle for disposing of used cups. Employees are reminded of their need for adequate amounts of water.

Non-Potable Water:

Outlets of non-potable water should be clearly identified as such, through appropriate signage, and non-potable water may never be used for drinking, washing, or cooking.

Toilets:

Toilets will be provided at job sites according to the below table:

Number of Employees	Minimum Number of Facilities
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

Toilet facilities would include, unless prohibited by local law:

- a. Privies (where their use will not contaminate ground or surface water)
- b. Chemical Toilets
- c. Recirculating toilets
- d. Combustion toilets

Washing Facilities:

Adequate washing facilities will be provided in near proximity to the job site if employees are working with contaminants that may be harmful to their health such as paint, coatings, or other chemical products. Paper towels and cleansing agents will be provided.

Showers and change rooms will be dictated by specific standards dealing with specific toxic materials (i.e., lead; asbestos).

Eating and Drinking Areas:

No employee will be allowed to consume food or beverages in any area exposed to toxic material.

Lifting, Pushing, and Pulling

Back injuries are often caused by the obvious – putting excessive strain on the lower back by lifting an object that is too heavy or awkward, or by bending and/or twisting while lifting.

However, lifting injuries are also caused by less obvious reasons:

- a. Poor physical condition
- b. Poor posture
- c. Poor judgment (lifting, pulling, pushing an object that is obviously too heavy or awkward without seeking assistance or a mechanical lifting device.)
- d. Lack of exercise
- e. Excessive body weight

Proper lifting techniques are important for employee safety. Below are lifting techniques that will reduce the likelihood of injury:

- a. Lift objects comfortably, not necessarily the quickest or easiest way.
- b. Lift, push, and pull with your legs, not your arms or back.
- c. When changing direction while moving an object, turn with your feet, not by twisting at the waist.
- d. void lifting higher than your shoulder height.
- e. When standing while working, stand straight.
- f. When walking, maintain an erect posture; wear slip-resistant, supportive shoes.
- g. When carrying heavy objects, carry them close to the body and avoid carrying them in one hand.
- h. When heavy or bulky objects need to be moved, obtain help or use a mechanical aid such as a dolly, hand truck, forklift, etc.
- i. When stepping down from a height of more than eight inches, step down backwards, not forward.
- j. Handle heavy objects close to the body – avoid reaching out.
- k. Lift gradually and smoothly. Avoid jerky motions.
- l. Maintain a clear line of vision.

Slips, Trips, and Falls

Slips, trips, and falls are among the most common job site accidents and they are easily preventable. Below are some of the causes of slips, trips, and falls:

- a. Running on the job site.
- b. Engaging in horseplay.
- c. Working off a ladder that is not firmly positioned.
- d. Carrying an object that blocks line of vision.
- e. Work boots not laced or buckled.
- f. Working off a scaffold without safety rails.
- g. Using ladders that have oil and grease on the rungs.
- h. Not using a handrail on steps.
- i. Messy work areas with debris strewn about.
- j. Not paying attention to what one is doing.

This list can go on and on, but all of the above are easily preventable by adherence to common safety procedures, common sense, and awareness of potential hazards on the job site.

Drugs, Alcohol, and Other Prohibited Behaviors

Drug Free Job Sites

The type of work we perform can result in serious injury if employees are not capable of focusing not only on their job task, but their surroundings and others with whom they work. It is the policy of KirbyCo Builders to hire only persons free from any evidence of illegal use of controlled substances or other drugs including alcohol.

Note: OSHA has determined that drug testing after injuries or illnesses that occur at the workplace can be considered retaliatory or discriminatory, and thus discourage employees from properly reporting the injury or illness. This can be the case in situations where the injury or illness wouldn't have been reasonably expected to be the result of being under the influence of drugs or alcohol.

Example: A bee sting that results in an allergic reaction and leads to a stay at the hospital. There is not a reasonable belief that a bee sting would be caused by impairment and thus drug testing would be considered retaliatory or discriminatory.

With the exception of over the counter drugs such as aspirin or drugs prescribed by a physician, there shall be no drugs or alcohol at the workplace. Alcohol and drug abuse cause an unacceptable level of safety hazard not only for the offending employee, but for others in the vicinity. Those found to be under the influence of drugs and/or alcohol will be immediately removed from the work area by the competent person and further disciplinary action will be taken by Chris Kirby, our Safety Director.

Chemical dependency is a devastating problem for not only the employee, but also the employee's family and co-workers. For obvious safety reasons, it cannot be tolerated in the workplace. Those with such a problem should seek professional help. Chris Kirby will assist any employee in finding appropriate treatment should they voluntarily come forward.

Smoking

There shall be no smoking except in designated smoking areas.

Under no circumstances will there be smoking during refueling of vehicles or within 50 feet of flammable materials.

Prohibited Behaviors

The use, bringing onto company property or job site, possession, concealment, transportation, promotion or sale of the following substances or items by any employee as well as the subcontractors that KirbyCo Builders might hire, and their employees, of the below items is prohibited:

- a. Illegal drugs, unauthorized controlled substances, look-a-likes, designer, synthetic or any other drug which may affect an employee's motor functions or alter a person's working perception.
- b. Prescription drugs/over the counter medication except under the following conditions:
 - 1. The employee shall inform his supervisor prior to using any prescription drug or over the counter medication and receive written permission to possess such drug while working on the job.
 - 2. The prescription vial shall be labeled by the dispensing pharmacy and the label shall show the employees name, physician, prescription number, date the prescription was filled and the dosage rate. Prescriptions more than 30 days old will not be allowed.
 - 3. The over the counter medication will be in its original package or container and the employee may only possess enough medication for their normal shift.
- c. Alcoholic beverages.
- d. Firearms, weapons, explosives, and ammunition.
- e. Unauthorized items such as stolen property or drug paraphernalia.

Emergency Action Plan

An Emergency Action Plan, if appropriate, will be posted at the job sites, along with emergency telephone numbers and an escape route diagram.

After a hazard assessment of a job site, Chris Kirby, the Safety Director, will determine if conditions may develop that could possibly warrant an evacuation. In this case, an emergency action plan will be developed to address the threat. Certainly, if work is being done at a hazardous chemical plant, for example, an emergency action plan is required and coordination will be made with the facility operator.

Events may occur which dictate the evacuation of a job site, such as a fire, explosion, power failure, etc. Additionally, events may occur which dictate the need for emergency medical responders. These sets of events fall under the Emergency Action Plan and a multitude of objectives must be met.

The first and foremost objective is the safety of all personnel of KirbyCo Builders. To achieve this level of safety, our plan is designed to get personnel away from danger, treat injury, and provide for a thorough and accurate accounting of all employees.

There may be situations where certain employees, trained in first aid and/or firefighting procedures, may prevent a small emergency situation from becoming a major disaster. In these types of situations, specifically identified employees will remain to perform the function for which they are trained, provided they may perform these duties in a safe manner. At no time will any employee put himself/herself at risk.

To the extent possible, job sites will have clear, direct egress.

The actual implementation of this plan must be direct and carried out without confusion. Employees must know how to alert others, how to call for assistance, the location of fire extinguishers and first aid kits, the escape route, and the rendezvous point (being accounted for so that others do not put themselves at risk looking for a person who has already reached safety).

Emergency Medical Response

Should an injury occur that requires an emergency medical responder, the below listed actions will be taken in the order given:

1. Call 911 or the emergency response number posted on the job site.
 - a. In the absence of 911 services, the telephone numbers of physicians, hospitals, or ambulances will be conspicuously post with our emergency phone numbers.
2. Provide any medical assistance you are trained and certified to do. **DO NOT** provide any medical assistance you are not trained to do.
3. Designate an individual to direct the emergency responders to the injured person and provide Safety Data Sheets if applicable.
4. Notify the competent person who, in turn, will notify the office.

Fire Protection

The phone number of the local fire department shall be posted with other emergency numbers.

If a fire should occur, all personnel and the local fire department will be notified. As in all emergency situations, per the American Trauma Society, people calling the fire department should:

- a. Remain calm
- b. Speak clearly and slowly
- c. Give the exact location
- d. Describe the situation
- e. Give the phone number from where you are calling.
- f. Do not hang up until told to do so

Fire Prevention Plan

Fire Prevention deals not with handling a fire emergency, but rather preventing a fire in the first place.

To reduce the likelihood of a fire, personnel are to adhere to the following rules:

- a. Smoking is allowed only in designated areas and smoking materials will be totally extinguished and placed in the appropriate receptacles.
- b. All chemical products will be handled and stored in accordance with the procedures noted on their individual SDS.
- c. Heat producing equipment will be properly maintained and operated per the manufacturer's instructions to prevent accidental ignition of combustible materials.
- d. Precautions will be taken when working with an open flame (such as welding) and those areas will be made fire safe by removing or protecting combustibles from ignition.
- e. Combustible liquids must be stored in approved containers.
- f. Chemical spills must be cleaned up immediately. This is particularly important for combustible and reactive liquids. Damaged chemical containers and cleanup materials must be properly disposed.
- g. Combustible liquids and trash must be segregated and kept from ignition sources.

Note: Information on appropriate personal protective equipment, proper disposal, proper cleanup procedures, required ventilation, etc. is found on the product's SDS.

- h. Keep clear access to fire hydrants as well as portable fire extinguishers.
- i. Personnel will be notified by their Supervisor or the competent person of any unusual fire hazard conditions existing on a job site.
- j. Good housekeeping, good housekeeping!

Portable Fire Extinguishers

All personnel will receive instruction on the proper use of fire extinguishers.

- a. Fire extinguishers will be inspected monthly for general conditions and adequate charge. They will be serviced and certified by qualified personnel at least annually.
- b. Portable fire extinguisher locations will be clearly identified and easily accessible.

Below are the four classification of fire extinguishers and a brief description.

Class	Distribution	Notes
A “A” on a green triangle	75 feet or less travel distance between the employee and the extinguisher	For use on wood, paper, trash, etc.
B “B” on a red square	50 feet or less travel distance between hazard area and the extinguisher	For use on flammable liquid, gas, etc.
C “C” on a blue circle	Based on the appropriate pattern for the existing Class A or Class B hazards	For use on electrical fires
D “D” on a yellow star	75 feet or less travel distance between the combustible metal working area and the extinguisher or other containers or Class D extinguishing agent	For use on combustible metals

Appropriate portable fire extinguishers will be used, as noted above. Supervisors will ensure that at least one extinguisher is on each floor of a project near the stairway.

Using the wrong fire extinguisher on some fires can actually spread the fire. Using a Type-A extinguisher on an electrical fire, for example, could cause serious injury. When a fire occurs, it is imperative to use the proper extinguisher.

First Aid and First Aid Kits

Should a medical emergency occur, other than minor scrapes and bruises, and it is serious enough to call for professional medical assistance, you should call the Emergency Response Number posted on the job site bulletin board. Before the first aid providers arrive, to the extent possible, clear the way so they can reach the injured employee in the most direct way possible.

If any employees of KirbyCo Builders are working at a location that is more than 3 or 4 minutes from medical assistance, we will utilize designated first aid providers who are trained and licensed in CPR/first aid and also is a designated first aid provider, as an additional job, as part of the company bloodborne pathogen program. Employees will not expose themselves to blood or other bodily fluids of other employees at any time.

Per OSHA, first aid is limited to:

- a. Using a non-prescription medication, such as aspirin, at non-prescription strength.
- b. Cleaning, flushing or soaking wounds on the surface of the skin;
- c. Using wound coverings such as bandages, Band-Aids™, gauze pads, etc., or using butterfly bandages or Steri-Strips™.
- d. Using hot or cold therapy.
- e. Using any **non-rigid** means of support, such as elastic bandages, wraps, non-rigid back belts, etc.
- f. Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.).
- g. Draining fluid from a blister.
- h. Using eye patches.
- i. Removing foreign bodies from the eye using only irrigation or a cotton swab.
- j. Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means.
- k. Using finger guards.
- l. Using massages.
- m. Drinking fluids for relief of heat stress.

If an employee is injured and emergency responders have been called, stay calm and reassure the injured employee that help is coming.

Below is basic first aid for various common job site injuries. Mostly, it is what **not** to do. When dealing with any injury, stay calm and never do anything unless you know what you are doing.

MINOR BURNS

(Redness or blisters over a small area)

Flush with cold water; apply a sterile dressing.

Do not use butter on any burn.

Do not break open blisters.

MAJOR BURNS

(White or charred skin; blisters and redness over a large area; burns on face, hands, or genital area)

Cover with sterile dressing and seek medical attention promptly.

Do not apply salves, ointments or anything else.

Do not break blisters.

CHEMICAL BURNS

(Spilled liquid or dry chemical on skin)

Liquid: Flush with large amounts of water immediately (Keep water flow gentle).

Dry: Brush as much off as possible before flushing with water. After flushing at least 5 minutes, cover with sterile dressing.

Seek medical attention promptly.

Do not use anything but water on burned area.

Do not break open blisters.

EYE - FOREIGN OBJECT

(Object visible; feeling of something in the eye)

Have patient pull upper eyelid over lower eyelid.

Run plain water over eye.

If object does not wash out, cover both eyes with a gauze dressing.

Seek medical attention promptly.

Do not rub the eye.

EYE - WOUNDS

(Wound on eyelid or eyeball; pain; history of blow to eye area; discoloration)

Apply loose sterile dressing over both eyes.

Seek medical help immediately.

For bruising, cold compress or ice pack may relieve pain and reduce swelling.

Do not try to remove any embedded object.

Do not apply pressure to eye.

EYE - CHEMICAL BURN

(Chemical splashed or spilled in eye)

Flush immediately with water over open eye for at least 10 minutes

(20 minutes if alkali). It may be necessary to hold patient's eyelid open.

Note: In work situations where a possibility of eye (or body) exposure to corrosive materials exists, suitable facilities for quick-drenching or flushing will be provided in the immediate work area.

Cover both eyes with sterile dressing.

Seek medical help immediately.

Do not put anything but water in eye.

HEAT EXHAUSTION

(Fatigue; weakness; profuse sweating; normal temperature; pale clammy skin; headache; cramps; vomiting; fainting)

Remove from hot area.

Have victim lay down and raise feet. Apply cool wet cloths.

Loosen or remove clothing.

Allow small sips of water if victim is not vomiting.

HEAT STROKE

(Dizziness; nausea; severe headache; hot dry skin; confusion; collapse; delirium; coma and death)

Call for immediate medical assistance.

Remove victim from hot area.

Remove clothing. Have victim lay down.

Cool the body (shower, cool wet cloths)

Do not give stimulants.

First Aid Kits:

First aid kits are worthless if not readily accessible. Therefore, they will not be locked up on job sites. They're also not very valuable if the items you need are missing. It's very important that the kits have the proper items and that they are replenished as they are used.

OSHA defers to ANSI for determining what qualifies as an acceptable first aid kit for the workplace. The ANSI standard that addresses first aid kits is ANSI/ISEA Z308.1-2015. Two important topics covered in this standard are what items are required to be included in a first aid kit: Class, and in what kind of container the kit is kept: Type.

Class

There are two classes of first aid kits: Class A and Class B. The two classes are divided based on the type of first aid items included and the number of those items available in the kit. ANSI has defined the classes as follows:

Class A first aid kits are intended to provide a basic range of products to deal with the most common types of injuries encountered in the workplace including: major wounds, minor wounds (cuts and abrasions), minor burns and eye injuries.

Class B first aid kits are intended to provide a broader range and quantity of supplies to deal with injuries encountered in more populated, complex and/or high risk work environments.

The biggest difference between the classes of first aid kits is the amount of items included in the kit. Class B kits have more of each item and are needed at a workplace that has many workers.

Keep in mind that sterile items will be individually wrapped, sealed, and used only once. Other items, such as tape or scissors, can be reused and should be kept clean.

The supplies consumed in first aid kits can actually be used as a measure of safety. For example, if a kit constantly needs replacement of bandages used for minor cuts, there is an obvious problem. Why are cuts happening in the first place? Actual trends can be established and corrective procedures initiated, such as a protective glove requirement or improved handling practices.

Remember, improper medical treatment can be more dangerous than no treatment at all. Only provide care that you have been trained and certified to do.

Below are the required contents, items and quantities of Class A and B first aid kits:

Class A	Class B
16 Adhesive Bandage 1 x 3 in.	50 Adhesive Bandage 1 x 3 in.
1 Adhesive Tape 2.5 yd (total)	2 Adhesive Tape 2.5 yd (total)
10 Antibiotic Application 1/57 oz	25 Antibiotic Application 1/57 oz
10 Antiseptic 1/57 oz	50 Antiseptic 1/57 oz
1 Breathing Barrier	1 Breathing Barrier
1 Burn Dressing (gel soaked) 4 x 4 in.	2 Burn Dressing (gel soaked) 4 x 4 in.
10 Burn Treatment 1/32 oz	25 Burn Treatment 1/32 oz.
1 Cold Pack 4 x 5 in.	2 Cold Pack 4 x 5 in.
2 Eye Covering w/ means of attachment 2.9 sq. in.	2 Eye Covering w/ means of attachment 2.9 sq. in.
1 Eye/Skin Wash 1 fl oz total	1 Eye/Skin Wash 4 fl. oz. total
1 First Aid Guide	1 First Aid Guide
6 Hand Sanitizer 1/32 oz	10 Hand Sanitizer 1/32 oz
2 pr Medical Exam Gloves	4 pr Medical Exam Gloves
1 Roller Bandage 2 in. x 4 yd	2 Roller Bandage 2 in. x 4 yd
1 Scissors	1 Roller Bandage 4 in. x 4 yd
2 Sterile pad 3 x 3 in.	1 Scissors
2 Trauma pad 5 x 9 in.	1 Splint
1 Triangular Bandage 40 x 40 x 56 in.	4 Sterile pad 3 x 3 in.
	1 Tourniquet
	4 Trauma pad 5 x 9 in.
	2 Triangular Bandage 40 x 40 x 56 in.

Type

As important as the contents are, the first aid kit won't be very useful if it's not properly protected from the workplace environment. If the supplies are soaked from rain or smashed from being tossed around, they just won't be able to provide any help when needed. ANSI has addressed this by providing guidelines for the containers that first aid kits can be stored in at the workplace.

They are broken down into four categories: **Type I, Type II, Type III, & Type IV**. Here are the descriptions that ANSI provides for each type.

Type I first aid kits are intended for use in stationary, indoor settings where the potential for damage of kit supplies due to environmental factors and rough handling is minimal. Type I first aid kits shall have a means for mounting in a fixed position and are generally not intended to be portable.

Note: Typical applications for Type I first aid kits may include, but are not limited to, the following: general indoor use, an office setting or a manufacturing facility. First aid cabinets would generally fall into the Type I classification.

Type II first aid kits are intended for portable use in indoor settings where the potential for damage of kit supplies due to environmental factors and rough handling is minimal.

Note: Typical applications for Type II first aid kits may include, but are not limited to, the following: general indoor use, an office setting or a manufacturing facility.

Type III first aid kits are intended for portable use in mobile, indoor and/or outdoor settings where the potential for damage of kit supplies due to environmental factors is not probable. Type III kits shall have a means to be mounted in a fixed position and shall have a water resistant seal.

Note: Typical applications for Type III first aid kits may include general indoor use and sheltered outdoor use.

Type IV first aid kits are intended for portable use in the mobile industries and/or outdoor settings where the potential for damage to kit supplies due to environmental factors and rough handling is significant. Type IV kits shall have a means to be mounted in a fixed position and shall meet the performance requirements set forth by ANSI.

Note: Typical applications for Type IV first aid kits may include, but are not limited to, the following: the transportation industry, the utility industry, the construction industry, and the armed forces.

Accident Investigation

The purpose of Accident Investigation is to prevent the same type of accident from reoccurring. An accident investigation will begin immediately after the medical crisis is resolved. The competent person/supervisor on the job site will complete an Accident Investigation Form as soon as feasible. The five questions that must be answered are: Who? What? When? Where? And most importantly - Why did the accident happen?

Apparently simple accidents may actually be caused by many complex reasons. Example: a worker is using a claw hammer on a working surface more than six feet above the ground. The hammer head breaks off and strikes a worker below who is not wearing a hard hat. Why did this accident happen? How can it be prevented? With just the facts presented, the fault would seem to rest with the worker who was struck by the falling object.

The accident investigation may reveal other contributing factors by answering questions like:

- a. Were hard hats required on the project, were they available, and was this policy enforced by the supervisors?
- b. Were precautions taken to prevent objects from falling from above, such as a controlled access zone (CAZ)?
- c. Did the worker inspect his hammer before use? Was he driving nails – the job for which a claw hammer is designed – or pounding metal beams?

After determining the cause of the accident, steps can be taken to prevent a reoccurrence. Near-miss mishaps, events which result in no injury or damage, should be investigated because even though the outcomes are different, the causes are the same.

Recordkeeping: Injuries & Illnesses

OSHA Forms 300; 300A & 301

As a matter of law, all employers with 11 or more employees **at any one time** in the previous year must maintain OSHA Form 300, *Log of Work-Related Injuries and Illnesses*, OSHA Form 301, *Injury and Illness Incident Report*, and OSHA Form 300A, *Summary of Work-Related Injuries and Illnesses*.

OSHA Forms 300 and 301 are used to record and classify occupational injuries and illnesses. The information on the OSHA Form 300 is related to employee health and must be used in a manner that protects the confidentiality of the employees to the extent possible. Recordable injuries and illnesses must be entered on OSHA Forms 300 and 301 within seven (7) days of receiving information that a recordable injury or illness has occurred.

Electronic Submission of Records

Effective on January 1st of 2017, certain employers are required to electronically submit injury and illness data on their onsite OSHA Injury and Illness forms. OSHA will analyze this data and will be able to use its enforcement and compliance assistance resources more efficiently.

Some of the data will also be posted to the OSHA website because OSHA believes that public disclosure will encourage employers to improve workplace safety.

OSHA will provide a secure website that offers three options for data submission:

First, users will be able to manually enter data into a webform.

Second, users will be able to upload a CSV file to process single or multiple establishments at the same time.

Last, users of automated recordkeeping systems will have the ability to transmit data electronically via an API (application programming interface). The site is scheduled to go live in February 2017.

Compliance Schedule

The new reporting requirements will be phased in over two years using the following guidelines:

Establishments with 250 or more employees in industries covered by the recordkeeping regulation must submit information from their 2016 Form 300A by July 1, 2017. These same employers will be required to submit information from all 2017 forms (300A, 300, and 301) by July 1, 2018. Beginning in 2019 and every year thereafter, the information must be submitted by March 2.

Establishments with 20-249 employees in certain high-risk industries must submit information from their 2016 Form 300A by July 1, 2017, and their 2017 Form 300A by July 1, 2018. Beginning in 2019 and every year thereafter, the information must be submitted by March 2.

Retention of Forms:

Old OSHA Forms 101 and 200 as well as OSHA Forms 300 and 301 will be retained for five years following the year to which they relate.

Items to be recorded on OSHA Forms 300, 300A and 301:

Work related injuries and illnesses and fatalities are to be recorded using the criteria found in Part 1904, Recording and Reporting Occupational Injuries and Illnesses.

Injuries and illnesses must be recorded if they result in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or if the injury or illness involves a significant injury diagnosed by a physician or licensed health care professional even if it does not meet the forgoing conditions.

Note: First aid (which is not reportable) is defined in 29 CFR 1904.7(b)(5)ii.

Employee Involvement:

As an employee of KirbyCo Builders, you have the right and responsibility to report all work-related injuries and illness without the fear of being retaliated against, discriminated against, or terminated from employment.

Note: OSHA has determined that drug testing after injuries or illnesses that occur at the workplace can be considered retaliatory or discriminatory, and thus discourages employees from properly reporting the injury or illness. This can be the case in situations where the injury or illness wouldn't have been reasonably expected to be the result of impairment.

Example: A bee sting that results in an allergic reaction and leads to a stay at the hospital. There is not a reasonable belief that a bee sting would be caused by impairment and thus drug testing would be considered retaliatory or discriminatory.

As a matter of policy, all employees are to report all work-related accidents and injuries immediately to the competent person/supervisor on a job site. The competent person/supervisor will complete an accident investigation form and will forward it to Chris Kirby, the Safety Director.

Chris Kirby will extrapolate appropriate information for completion of the OSHA Form 300 and complete a review of our policies and procedures to help ensure that there isn't a reoccurrence of the reported injury or illness.

Failure to report injuries or illnesses would be a violation of our company's reporting policy and is not acceptable.

Catastrophic Reporting Requirements:

The following events have to be reported to OSHA:

1. All work-related fatalities
2. All work-related in-patient hospitalizations of one or more employees
3. All work-related amputations
4. All work-related losses of an eye

KirbyCo Builders must report work-related **fatalities within 8 hours of finding out about it**. For any in-patient hospitalization, amputation, or eye loss, we **must report the incident within 24 hours of learning about it**.

Only fatalities occurring within 30 days of the work-related incident must be reported to OSHA. Further, an inpatient hospitalization, amputation or loss of an eye incident must be reported to OSHA only if they occur within 24 hours of the work-related incident.

There are three options for reporting the event:

1. By telephone to the nearest OSHA Area Office during normal business hours. The phone numbers can be found at the following website: <https://www.osha.gov/html/RAmap.html>.
2. By telephone to the 24-hour OSHA hotline (**1-800-321-OSHA or 1-800-321-6742**).
3. By using OSHA's new means of reporting events electronically. This can be done online at the following website: <https://www.osha.gov/pls/ser/serform.html>.

Information to Be Reported:

When reporting a fatality, in-patient hospitalization, amputation or loss of an eye to OSHA, following information must be reported:

1. Establishment name
2. Location of the work-related incident
3. Time of the work-related incident
4. Type of reportable event (i.e., fatality, in-patient hospitalization, amputation or loss of an eye)
5. Number of employees who suffered the event
6. Names of the employees who suffered the event
7. Contact person and his or her phone number
8. Brief description of the work-related incident

Note: An event does not have to be reported if it:

1. Resulted from a motor vehicle accident on a public street or highway, except in a construction work zone; employers must report the event if it happened in a construction work zone.
2. Occurred on a commercial or public transportation system (airplane, subway, bus, ferry, street car, light rail, train).
3. Occurred more than 30 days after the work-related incident in the case of a fatality or more than 24 hours after the work-related incident in the case of an in-patient hospitalization, amputation, or loss of an eye.

Note: A report must be made for an in-patient hospitalization due to a heart attack, if the heart attack resulted from a work-related incident.

Location of OSHA Forms 300 and 301:

As a general rule, the OSHA Forms 300 and 301 will be maintained in the main office. However, in the event that a project is to last more than one year, that job site will be considered a fixed establishment and maintain its own OSHA Forms 300 and 301.

Incident Rate:

One indication of the success of the safety effort put forth by KirbyCo Builders is our “incidence rate”. When bidding a job, our incidence rate could be a determining factor in a successful bid. The incidence rate is determined by the following formula:

$N/EH \times 200,000$ where:

N = number of injuries and/or illnesses

EH = total hours worked by all employees during the calendar year.

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

To find the “Lost Workday Injury Rate” (LWDI), the following formula is used:

$WDI \text{ Rate} = (\# \text{ LWDI's} \times 200,000) / \# \text{ employee hours worked}$

LWDI = sum of LWDI's in reference years

employee hours worked = sum of employee hours in reference years

200,000 = base for 100 full-time equivalent workers
(working 40 hours per week, 50 weeks per year)

When accidents and injuries occur, they have an immediate detrimental impact on those employees involved. Additionally, they have a potential lingering negative impact on our company and our ability to get work.

Postings

On every job site there will be a prominently displayed bulletin board or area for postings. Every employee must be aware of this policy. Certain postings are required as a matter of law in all cases and other postings are required depending on circumstances and types of work being done.

In all cases, the following must be posted to meet OSHA requirements:

- a. OSHA Form 3165, *It's the law!*
- b. During the period from 1 February through to April 30, OSHA Form 300A, *Summary of Work-Related Injuries and Illnesses*, must be posted for work-related injuries and illnesses which have occurred during the previous year.
- c. Emergency phone numbers and site address for emergency response.

If appropriate, the following must be posted:

- a. OSHA citations.
- b. Notice of informal hearing conference.
- c. Names and location of assigned first aid providers.
- d. Air or wipe sampling results.
- e. Emergency action plan.

Access to Employee Medical Records & Exposure Records

29 CFR 1910.1020 - Access to employee exposure and medical records

All employee exposure records and medical records are under the control of the safety program administrator, .

Exposure records must be retained for 30 years.

Medical records must be retained for the duration of employment plus 30 years.

An employee's medical record means: "a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician."

This would include:

- a. Medical and employment questionnaires or histories (including job description and occupational exposures).
- b. The results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purpose of establishing a base-line or detecting occupational illnesses and all biological monitoring not defined as an "employee exposure record".
- c. Medical opinions, diagnoses, progress notes, and recommendations.
- d. First aid records.
- e. Descriptions of treatments and prescriptions.
- f. Employee medical complaints.

Note: An employee's medical record does not include:

- a. Physical specimens (e.g., blood or urine samples) which are routinely discarded as a part of normal medical practice, or
- b. Records concerning health insurance claims if maintained separately from the employer's medical program and its records, and not accessible to the employer by employee name or other direct personal identifier (e.g., social security number, payroll number, etc.).
- c. Records created solely in preparation for litigation which are privileged from discovery under the applicable rules of procedure or evidence.
- d. Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the employer's medical program and its records.

An employee's employee **exposure record** means a record containing any of the following kinds of information:

- a. Environmental (job site) monitoring or measuring of a toxic substance or harmful physical agent, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained.
- b. Biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent or which assess an employee's use of alcohol or drugs.
- c. Safety data sheets, indicating that the material may pose a hazard to human health.
- d. In the absence of the above, a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.
- e. Objective Data for Exemption from Requirement for Initial Monitoring.

Employee Information

Upon first entering into employment, and at least annually thereafter, each employee will be informed of the following:

- a. The existence, location, and availability of any records covered by 29 CFR 1910.1020.
- b. The person responsible for maintaining and providing access to records (Chris Kirby, the Safety Director).
- c. The employee's rights of access to his/her records.
- d. That a copy of 29 CFR 1910.1020 and its appendices will be maintained in the office of Chris Kirby and made readily available upon request.

Informational materials concerning access to medical records received from or provided by the Assistant Secretary of Labor for Occupational Safety and Health will be distributed to all current employees.

Access to Records

Employees or their designated representatives will have access to their medical or exposure records within 15 working days of their request, or, if this is not possible, will provide, within 15 working days, the reason for the delay and provide a best estimate of when the records will be available.

Copies of employee medical or exposure records will be provided in a reasonable time, place, and manner and **at no cost to the employee.**

Upon request, Chris Kirby will provide access to representatives of the Assistant Secretary of Labor for Occupational Safety and Health employee exposure and medical records and to analysis using exposure or medical records.

Analysis Using Medical or Exposure Records

"Analysis using exposure or medical records" means any compilation of data or any statistical study based at least in part on information collected from individual employee exposure or medical records or information collected from health insurance claims records, provided that either the analysis has been reported to the employer or no further work is currently being done by the person responsible for preparing the analysis.

Before access is granted to an analysis using medical or exposure records, all personal identifiers must be removed that could directly identify the employee. Identifiers would include: name, SSN, address, etc. Identifiers that could indirectly identify the employee will also be removed. These would include date of hire, sex, job title, etc.

Confidentiality

Nothing in the OSHA standards is intended to affect existing legal and ethical obligations concerning the maintenance and confidentiality of employee medical information, the duty to disclose information to a patient/employee or any other aspect of the medical-care relationship, or affect existing legal obligations concerning the protection of trade secret information.

Transfer of records

Should we cease to do business, the successor employer shall receive and retain all the above medical and exposure records.

Should we cease to do business and there is no successor employer to receive and retain the above medical and exposure records, they shall be transmitted to the Director of the National Institute for Occupational Safety and Health (NIOSH).

At the expiration of the retention period for the above medical records, we will notify the Director of the NIOSH at least 3 months prior to the disposal of such records and shall transmit those records to the Director of the NIOSH if he requests them within that period.

Enforcement

It is expected that all employees will abide by the safety rules and guidelines that KirbyCo Builders has in place, not only to protect themselves, but also to protect their fellow workers from harm. If a safety violation occurs, the following steps will be taken by the employee's immediate supervisor:

Minor Safety Violations: Violations which would **not** reasonably be expected to result in serious injury.

- a. The hazardous situation will be corrected.
- b. The employee will be informed of the correct procedures to follow and the supervisor will ensure that these procedures are understood.
- c. The supervisor will make a written report of the occurrence using the Enforcement Documentation Form and inform the employee that this documentation will be forwarded to Chris Kirby, our Safety Director, for a retention period of one year.
- d. A repeat occurrence of the same minor safety violation is considered substantially more serious than the first.

Major Safety Violations: Violations which would reasonably be expected to result in serious injury or death.

- a. The hazardous situation will be corrected.
- b. The employee will be informed of the correct procedures to follow and their supervisor will impress upon the individual the severity of the violation and the likely consequences should this type of violation be repeated. The supervisor will ensure that the individual understands the correct procedures and will be cautioned that a reoccurrence could result in disciplinary action up to and including discharge.
- c. The supervisor will make a written report of the occurrence using the Enforcement Documentation Form and inform the employee that this documentation will be forwarded to Chris Kirby for a retention period of one year.

Willful Major Safety Violations: Intentional violation of a safety rule which would reasonably be expected to result in serious injury to the employee or a fellow worker.

- a. The hazardous situation will be corrected.
- b. The employee will be removed from the job site, the event will be documented and forwarded to Chris Kirby, and the employee will be discharged.

Employees are to understand that the primary purpose of documenting safety violations is to ensure that the important business of employee safety is taken seriously and that the potential for injury is reduced to the lowest possible level.

Schedule of Enforcement Actions

Violations Occurring within a 1 Calendar Year Period

Minor Violation

Offense	Action	Repeat of Same Offense	Action
1st	Written Notice	1st	1 Day Off
2nd	Written Notice	2nd	3 Days Off
3rd	1 Day Off	3rd	Dismissal
4th	2 Days Off		
5th	3 Days Off		
6th	Dismissal		

Major Violation

Offense	Action	Repeat of Same Offense	Action
1st	Written Notice	1st	4 Days Off
2nd	2 Days Off	2nd	Dismissal
3rd	4 Days Off		
4th	Dismissal		

KirbyCo Builders
Section II
Site/Job Specific Policies and Procedures

Abrasive Wheels

29 CFR 1926.303 - Abrasive wheels and tools

An abrasive wheel is defined as a cutting tool consisting of abrasive grains held together by organic (resin, rubber, shellac or similar bonding agent) or inorganic bonds. Hazards that present themselves during abrasive wheel operations include physical contact with the rotating wheel; destruction of the wheel itself; inhalation of the bonding particles; being struck by flying fragments. All these hazards can be eliminated through adherence to appropriate machine guarding principles, appropriate PPE, and/or respiratory protection.

Immediately before mounting, wheels must be inspected and sounded (ring test) to ensure they have not been damaged. Ensure the spindle speed does not exceed the maximum operating speed noted on the wheel.

Ring Test: The wheel to be tested must be dry and free from sawdust. Wheels should be tapped gently with a light, nonmetallic implement; such as the handle of a screwdriver, or a wooden mallet for heavier wheels. If they sound cracked (dead), they may not be used. It should be noted that organic bonded wheels do not emit the same clear metallic ring as do vitrified and silicate wheels. Tap the wheels about 45° each side of the vertical centerline and about one or two inches from the periphery. Rotate the wheel about 45° and repeat the test. A sound, undamaged wheel will give a clear metallic tone.

Guarding: Abrasive Blades in Portable Circular Saws:

It is important to distinguish between a saw and an abrasive blade because they have different guarding requirements. An abrasive wheel, as defined by 29 CFR 1910.211(b)(14) and American National Standards Institute (ANSI) B7.1-1970, as "a cutting tool consisting of abrasive grains held together by organic or inorganic bonds."

If a wheel is, for example, constructed with bonded, steel fragments arranged in intermittent clusters around the periphery of a steel disc, the steel fragments are too large and sharp to be considered abrasive grains. If these fragments remove material primarily by severing rather than by abrasion, then this would be considered a saw blade and the guarding requirements would be found in General Requirements, located here 29 CFR 1926.300.

If, in fact, cutting is done by the abrasive action of the abrasive grains, guarding requirements are found in Abrasive Wheels and Tools, located here 29 CFR 1926.303(b).

ANSI B7.1 requires the upper half of the abrasive blade to be guarded when abrasive wheels are installed on portable power driven circular saws.

Aerial Lifts

29 CFR 1926.453 - Aerial lifts

Aerial lifts acquired for use which were manufactured on or after January 22, 1973 will have a placard or label affixed which indicates that the lift is designed and constructed in accordance with ANSI standard A92.2-1969. Aerial lifts acquired for use prior to January 22, 1973 may not be used unless modified to meet this standard. Aerial lifts may be modified to perform other than originally designed tasks provided the modifications are certified by the manufacturer or a nationally recognized testing laboratory that the aerial lift conforms with ANSI standard A92.2-1969 and is as safe as before modifications.

Aerial lifts include the following types of vehicle-mounted aerial devices to elevate personnel to job-sites above the ground:

- a. Extensible boom platforms
- b. Aerial ladders
- c. Articulating boom platforms
- d. Vertical towers
- e. A combination of any of the above

Only authorized persons may operate an aerial lift.

Lift controls and equipment must be inspected and tested each day, prior to use, to determine that they are in a safe working condition.

When working from an aerial lift, you must stand firmly on the floor of the basket or cage, and **use (wear) an approved fall restraint system**. The fall restraint system must be attached to the boom or basket – it may not be attached to any adjacent pole, structure, or other equipment. You may not sit or climb on the edge of the basket; also **do not** use planks, ladders, or other devices for a work position.

Load limits set by the manufacturer must never be exceeded.

The brakes must be set. When outriggers are used, they shall be positioned on pads or a solid surface.

Aerial lifts must not be moved with personnel in the basket unless it is designed for this type of operation. Aerial lifts designed as personnel movers must have controls that are clearly marked as to their use and the lower controls must be able to override the upper controls. Except in an emergency, the lower controls shall not be used unless permission has been granted by the persons in the lift.

It is required that the vehicle have a “reverse signal alarm” audible above the surrounding noise level or a ground-guide (spotter), using standard hand signals, when backing up. The vehicle will be backed up only when the spotter signals that it is safe to do so. Using a ground-guide provides a substantially higher level of safety than a “reverse signal alarm” because the vehicle can be guided to an exact location with assurance that there is sufficient clearance from objects, and, most importantly, no person is in harm’s way. Special attention will be given to avoiding contact with electrical lines.

Combustible & Flammable Liquid Handling

29 CFR 1926.152 - Flammable and combustible liquids

Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids. Approved safety cans or Department of Transportation approved containers will be used for handling and use of flammable liquids in quantities of 5 gallons or less.

Note: The above does not apply to flammable liquid materials which are highly viscid (extremely hard to pour) which may be used and handled in their original shipping containers.

Note: For quantities of one gallon or less, the original container may be used for storage, use and handling.

Flammable or combustible liquids may not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

Inside a facility, no more than 25 gallons of flammable or combustible liquids may be stored in a room outside of an approved storage cabinet.

GASOLINE: General Information

Because most persons use or indirectly handle gasoline on a regular basis – from filling up automobiles to lawn mowers – the hazards presented by this product may have become obscure. Just because you are familiar with gasoline, never lose sight of the lethal hazards that it may contain.

Gasoline is a flammable liquid which means it has a flash point of less than 100°F. The actual flash point – lowest temperature at which a liquid gives off enough vapor to form a flammable mixture with air – of gasoline is -45°F. The auto-ignition temperature – the temperature at which, with sufficient oxygen, gasoline will ignite on its own and burn – is 536°F.

Gasoline has a specific gravity – the weight of the gasoline compared to the weight of an equal volume of water – of 0.73. Further, gasoline has a negligible solubility in water. Basically, what the above means is that if water is used to extinguish a gasoline fire, it will only spread it because the gasoline will float on the water and continue to give off a vapor and form a flammable mixture with air. Gasoline fires must be fought with an extinguisher that is rated for Class B fires such as carbon dioxide, dry chemical, or foam. It should be noted that water spray may be used to cool containers that may be exposed to the heat of the fire to prevent an explosion.

Conditions to avoid: heat, flame, & sources of ignition

Materials to avoid: strong oxidizers

Health hazard information: routes of entry: inhalation, skin, ingestion

Signs & symptoms of overexposure: headache, nausea, drowsiness, breathlessness, fatigue, convulsions, loss of conscience, dermatitis

If there is a spill, notify emergency response personnel, evacuate area, remove ignition sources, and build a dike to contain flow – do not flush to sewer or open water. Pick up with inert absorbent and place in closed container for disposal.

Gasoline is a carcinogen – a cancer causing agent.

General rules: Post “No Smoking” signs around gasoline storage and ensure that it is enforced. Use only approved plastic or metal containers for portable gasoline carriers. They must not contain more than 5 gallons.

Double check with local ordinances for storage requirements.

Company Vehicles

Note: The below applies only to employees who DO NOT operate a commercial motor vehicle (CMV) in interstate or intrastate commerce.

Only authorized employees may operate, in the course of their work, any company-owned motor vehicle.

Prior to authorization, the employee must possess a valid and current license to operate the vehicle. Chris Kirby, our Safety Director, or authorized representative, will ensure that the employee has demonstrated his/her ability to operate the motor vehicle in a safe and competent manner.

Under no circumstances may any motor vehicle be operated under the influence of alcohol, illegal drugs, or prescription or over-the-counter drugs medications that may impair their driving skills.

When driving over the road vehicles, employees will ensure that the vehicle registration and proof of insurance is within the vehicle. In the event of an accident, Chris Kirby will be notified immediately after all potential injuries are addressed and a police report is filled out. Employees must report all traffic violations to Chris Kirby and they (employees) are responsible for paying all penalties imposed by law.

Loads in vans and trucks will be properly secured (strapped or blocked) to prevent any shift or movement and care will be taken to not exceed the vehicles weight limits.

All company motor vehicles will be maintained in safe operating condition and in accordance with the manufacturer's recommended maintenance schedule.

Before use, a walk around inspection will be performed by the operator checking tires (tread depth and pressure), glass (chips and cracks), horn and lights, and general vehicle condition. **No vehicle will be operated that is not in safe mechanical condition.**

It is expected that the below safe vehicle operation/driving procedures will be followed at all times:

- a. Seat belts will be worn by all occupants at all times while the vehicle is in motion
- b. Safe distance (one vehicle length per 10 MPH) will be maintained
- c. Posted speed limits will not be exceeded
- d. During fuel stops, all fluids will be checked and the windows, headlights and taillights will be cleaned
- e. Constant attention will be maintained by always being aware of road conditions and surrounding vehicles

Note: Unnecessary distractions will not be permitted such as using hands to dial or receive cell phone calls or changing radio stations while the vehicle is in motion.

- f. Before backing up any vehicle, check behind and blow horn for the safety of others.

Compressed Air

29 CFR 1910.101 - Compressed gases (general requirements)

29 CFR 1910.242 - Hand and Portable Powered Tools and Other Hand-Held Equipment

29 CFR 1910.169 - Air Receivers

29 CFR 1926.302 - Tools - Power-operated hand tools

29 CFR 1926.306 - Air Receivers

Prior to using compressed air, employees will receive training in:

- a. Safe use of compressed air.
- b. Pneumatic power tools.
- c. Inspection of compressed gas cylinders

Safe Use of Compressed Air:

The below applies to compressed air receivers, and other equipment used in providing and utilizing compressed air for performing operations such as cleaning, drilling, hoisting, and chipping.

- a. Air receivers shall be so installed that all drains, handholes, and manholes therein are easily accessible. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place.
- b. A drain pipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.
- c. Every air receiver shall be equipped with an indicating pressure gauge (so located as to be readily visible) and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.
- d. No valve of any type shall be placed between the air receiver and its safety valve or valves.
- e. Safety appliances, such as safety valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.
- f. All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

Compressed Gas Cylinders

29 CFR 1926.350 - Gas Welding and Cutting

29 CFR 1910-253 - Oxygen-Fuel Gas Welding and Cutting

Compressed Gas Cylinders Use

Compressed gas cylinders are used at many workplaces – the most common being oxygen and acetylene for welding.

Failure to follow basic safety procedures could result in serious injuries such as:

- a. Flash burn - due to explosion.
- b. Fragment impalement - due to explosion.
- c. Compression of the foot - due to mishandling of tanks.
- d. Inhalation of hazardous gases - due to leakage.

Basic safety procedures for compressed gas cylinders:

- a. Cylinders must remain upright and chained to a substantial support or cart when in use.
- b. Wear appropriate personal protective equipment for the job – such as steel toed shoes, apron, goggles, gloves, helmet, etc.
- c. Read and understand the SDS for the gas being used and know the location of the SDS in case of an emergency.
- d. Have appropriate fire extinguisher readily available
- e. To release the gas, open the cylinder valve slowly – standing away from the face and back of the gage – and leave the opening tools in place (on the valve stem) for quick shut-off in the event of an emergency.
- f. Ensure cylinder valves, regulators, couplings, and hose are free of oil and grease and ensure all connections are tight.
- g. When using oxygen-fuel systems, use flashback arrestors and reverse-flow check valves to prevent flashback.
- h. Keep cylinders away from open flames and sources of heat.
- i. Cylinders are never allowed in confined spaces.
- j. Do not alter or attempt to repair safety devices or valves.
- k. Remove the regulators when: a) moving cylinders; b) work is completed; and c) cylinders are empty.
- l. Take care to prevent combustible materials from exposure to welding or cutting operations.

All employees who use compressed gas cylinders will be trained in their proper storage, handling, and use.

Specific requirements for compressed gas cylinder use include:

- a. Compressed gas cylinders will be clearly marked to identify the gas contained therein. Gas identification must be stamped or stenciled on the gas cylinder or a label affixed. No gas cylinder will be accepted for use that does not legibly identify its content by name.
- b. Visual or other inspections will be performed by the competent person on site to ensure the compressed gas cylinders are in a safe condition.
- c. Compressed gas cylinders will be inspected to ensure they are equipped with the correct regulator. Before use, regulators and cylinder valves will be inspected to ensure they are free from oil, dirt, and solvents.
- d. Compressed gas cylinders will have valve protectors in place when not in use or connected for use.
 1. When a cylinder cap cannot be removed by hand, the cylinder will be tagged **“Do Not Use”** and returned to the designated storage area for return to the vendor.
- e. The user of the compressed gas cylinders will use **only the tools supplied by the provider** to open and close cylinder valves.
- f. Valves will be closed before the cylinder is moved, when the cylinder is empty, and at the completion of each job.
- g. Leaking cylinders will be moved to an isolated, well-ventilated area, away from ignitions sources.

Note: Soapy water will be used to detect the exact location of the leak. If the leak is at the junction of the cylinder valve and cylinder, do not attempt to repair it. The supplier will be contacted and asked for proper response instructions.
- h. Gasses may never be mixed in a cylinder. **Only professionals may refill gas cylinders.**
- i. Hoses and connections will be inspected regularly for damage. Hoses should be stored in cool areas and protected from damage.

Transportation of Compressed Gas Cylinders

- a. Compressed gas cylinders must be transported in a vertical secured position using a cylinder basket or cart.
- b. Regulators should be removed and cylinders capped before movement.
- c. Cylinders may never be rolled. Cylinders should not be dropped or permitted to strike violently.
- d. Protective caps are not to be used to lift cylinders.

Compressed Gas Cylinders Storage

- a. Cylinders must be secured at all times in such a way as to avoid them being knocked over or damaged. They must be stored in a vertical position. They must be segregated based on contents. 20 feet should be maintained between oxidizers and flammables or firewalls erected at least 5 feet high with a fire rating of 30 minutes.
- b. Cylinders must be protected from damage, corrosion, sunlight.
- c. Cylinders must be stored in well protected, well ventilated, dry locations away from sunlight. Cylinders will never be kept in unventilated enclosures such as lockers or cupboards.
- d. Cylinders must be stored away from stairs, elevators, and gangways.
- e. Clearly designated and labeled **separate storage area** will be provided for **full and empty** cylinders.
- f. Empty cylinders that are no longer needed must be marked as "MT" and dated when empty. Empty cylinders must be handled as carefully as full cylinders.
- g. Cylinders will be capped when they are not being used.

Inspection of compressed gas cylinders:

We shall determine that compressed gas cylinders under the control of KirbyCo Builders are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the Hazardous Materials Regulations of the Department of Transportation (49 CFR parts 171-179 and 14 CFR part 103).

Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962, which is incorporated by reference as specified in Sec. 1910.6.

Note: Compressed gas cylinders, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S-1.1-1963 and 1965 addenda and S-1.2-1963, which is incorporated by reference as specified in Sec. 1910.6.

Delivery Crane Trucks

Note: The below information is applicable to the following crane types and operations:

- a. Articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.
- b. Articulating/knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. Such sheet goods or packaged materials include, but are not limited to: sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.

Note: The above articulating/knuckle-boom crane exclusion does not apply when it is used to 1) hold, support or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure; 2) when the material being handled is a prefabricated component such as precast concrete members or panels, roof trusses, prefabricated building sections such as, but not limited to: floor panels, wall panels, roof panels, roof structures, or similar items; and, 3) when the material being handled by the crane is a structural steel member (for example, steel joists, beams, columns, steel decking (bundled or unbundled) or a component of a systems-engineered metal building.

All other crane operations fall under Subpart CC—Cranes and Derricks in Construction, located here 29 CFR 1926.1400

Cranes, like all pieces of heavy equipment, if not properly operated, inspected and maintained, have a potential for causing major bodily injury or property damage. Care must be taken in all facets of crane operation.

Not only do cranes require a thorough annual inspection (a record of the dates and results of these inspections must be maintained) they require inspection prior to each use and even during use by a competent person.

All rated load capacities, recommended operating speeds, and special hazard warnings or instructions must be readily visible to the operator of the crane.

While cranes easily have the lifting ability to hoist employees on a personnel platform, this is **absolutely prohibited** except in cases when the erection, use, and dismantling of conventional means of reaching the worksite would be more hazardous or is not possible because of structural design or worksite conditions. A conventional means would include: a personnel hoist, ladder, stairway, aerial lift, and elevating work platform or scaffold.

It is absolutely imperative that the possibility of electrocution be totally eliminated. This can be accomplished by adhering to the safe distances from various currents noted in *The Control of Hazardous Energy (Lockout/Tagout)*, located at 29 CFR 1910.147.

Dangers associated with cranes include numerous moving parts. These dangers can be minimized or eliminated by ensuring that all guards are in place and not tampered with.

Care must be taken to ensure that areas within the swing radius, of the rear of the rotating superstructure of the crane, are barricaded to prevent a person from being struck or crushed.

All employees must keep clear of loads that are about to be lifted as well as suspended loads.

When using slings made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene), the following safe operating practices will be observed:

- a. Slings shall not be shortened with knots or bolts or other makeshift devices.
- b. Sling legs shall not be kinked.
- c. Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- d. Slings shall be padded or protected from the sharp edges of their loads.
- e. Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

Hand signals used to guide the crane operator will be consistent with the ANSI standard for the type of crane in use and an illustration of the signals must be posted at the job site.

Care must be taken while actually operating the crane in hoisting applications as well as when relocating the crane superstructure.

The competent person on site will ensure that the flooring on which equipment may be placed is substantial enough to safely hold the weight of the load. If the strength of the floor is unknown and/or cannot be determined, a professional engineer will determine the pounds per square foot required and, if necessary, the appropriate shoring to be installed to sustain the weight.

Disposable Respirators

OSHA requires that employees who voluntarily use disposable respirators in situations where respiratory protection is not specifically required by OSHA standard (in atmospheres where exposures are below the permissible exposure limit) essentially for personal comfort or additional, though not required, respiratory protection be informed of 29 CFR 1910.134 Appendix D, printed below.

Standard Number: 1910.134 App D

Standard Title: (Mandatory) Information for Employees Using Respirators When Not Required Under Standard.

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following: 1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations. 2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you. 3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke. 4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

All disposable respirators, such as Moldex, 3M, Wilson, North Safety, etc. must be marked with the manufacturer's name, the part number, the protection provided by the filter, and "NIOSH".

Disposable filters are actually negative pressure respirators. They protect the user by filtering particles out of the air breathed.

Though disposable filters cannot be fit-tested in the traditional sense, they must be fit-tested in accordance with the manufacturer's instructions.

Electrical Work - Workplace Safety

29 CFR 1910.332 - Training

29 CFR 1910.333 - Selection and use of work practices

29 CFR 1926.402 - Applicability

29 CFR 1926.403 - General requirements

29 CFR 1926.404 - Wiring design and protection

29 CFR 1926.408 - Special systems

29 CFR 1926.416 - General requirements

29 CFR 1926.449 - Definitions applicable to this subpart

NFPA 70E - Standard for Electrical Safety in the Workplace

No electrical work shall be performed on electric distribution circuits or equipment, except by a qualified person or by a person trained to perform electrical work and to maintain electrical equipment under the direct supervision of a qualified person. Disconnecting devices shall be locked out and suitably tagged by the persons who perform such work, except that in cases where locking out is not possible, such devices shall be opened and suitably tagged by such persons. Locks or tags shall be removed only by the persons who installed them or, if such persons are unavailable, by persons authorized by the operator or his agent.

Only qualified or trained personnel may perform electrical work.

All electrical work will be done according to the latest adopted National Electrical Code as well as established local codes.

Only qualified persons may work on electric circuit parts or equipment that has not been de-energized. These persons must be made familiar with the use of special precautionary techniques, PPE, insulating & shielding materials and insulated tools.

Note: When dealing with safety related work practices to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, a Qualified Person is defined as one who: "is permitted to work on or near exposed energized parts" and who, at a minimum, has been trained in and is familiar with:

- a. The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment, and
- b. The skills and techniques necessary to determine the nominal voltage of exposed live parts, and
- c. The clearance distances specified in 29 CFR 1910.333(c) and the corresponding voltages to which the qualified person will be exposed

Electrical Safety Measures

- a. Daily, prior to use, all electrical equipment – including extension cords – will be inspected and defective items will be tagged out of service and not used.
- b. With the exception of double insulated tools (with UL approval), all electrical tools and equipment will be grounded.
- c. Tools will not be hoisted by their flexible electrical cords.
- d. Except in an emergency, load rated switches and circuit breakers will be used for the opening and closing of circuits under load conditions as opposed to fuses and splice connections.
- e. While working on electrical equipment, unauthorized persons will be kept clear by barriers or other means of guarding.
- f. Temporary wiring and extension cords will be kept off of walking working surfaces and vehicle traffic areas or covered to prevent tripping and vehicle damage.
 - 1. Electrical cords will not be suspended with staples, hung from nails, or suspended by wire.
 - 2. Worn or frayed electric cords or cables will not be used.
- g. Hands will be dry when working on electrical equipment including plugging in extension cords.
- h. Areas in which electrical work is to be done must be adequately illuminated and temporary lighting must:
 - 1. Have guards in place.
 - 2. Not be suspended by its cords unless specifically designed for such installation.

- i. A competent person, before work commences, will inform all employees in the work area of both exposed and concealed electrical hazards. If appropriate, warning tags will be used to prevent accidental contact with electrical energy.
- j. When working around any electrical power circuit, employees will:
 - 1. Protect themselves by de-energizing the circuit and grounding it or by establishing insulation between themselves and the current.
 - 2. Ensure that any conductive materials and equipment that are in contact with any part of their body will be handled in a manner that will preclude contact with exposed energized conductors or circuit parts.
 - 3. Use portable ladders that have non-conductive siderails.
 - 4. Remove or insulate conductive articles of jewelry and clothing that might contact exposed energized parts.
- k. All 15, 20, or 30-amp receptacle outlets that are not part of the permanent wiring of the building or structure and that are used by personnel shall have ground-fault circuit interrupter protection for personnel. GFCI pigtails may be used to meet this requirement if properly sized. Remember, extension cords are considered temporary wiring.
 - 1. Ground fault circuit interrupters will be tested before use.
- l. Only qualified persons may perform testing work on electric circuits or equipment.
- m. Sufficient access and working space must be maintained about all electric equipment to permit ready and safe operation and maintenance. This space must be kept clear, i.e., it cannot be used for storage.
- n. If any work is to take place under overhead lines, the lines must be de-energized and grounded or other protective measures taken such as physically preventing approach such as using a barrier.
- o. Portable ladders must have non-conductive side rails.
- p. Conductive items of jewelry or clothing must not be worn around electricity unless rendered non-conductive by covering, wrapping, or other insulating means.

- q. The dimension of the working space in the direction of access to live parts likely to required examination, adjustment, service, or maintenance must not be less that noted below:

Working Clearances

Minimum clear distance for the below conditions ¹			
<u>Nominal voltage to ground</u>	<u>Feet(a)</u>	<u>Feet(b)</u>	<u>Feet(c)</u>
0-150	3	3	3
151-600	3	3 1/2	4
Footnote¹ Conditions (a), (b), and (c) are as follows: (a) 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 insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. (b) Exposed live parts on one side and grounded parts on the other side. (c) Exposed live parts on both sides of the workplace [not guarded as provided in Condition (a) with the operator between.			

Minimum Depth of Clear Working Space in Front of Electric Equipment			
<u>Nominal voltage to ground</u>	<u>Feet(a)</u>	<u>Feet(b)</u>	<u>Feet(c)</u>
601 to 2,500	3	4	5
2,501 to 9,000	4	5	6
9,001 to 25,000	5	6	9
25,001 to 75 kV	6	8	10
Above 75 kV	8	10	12
Footnote¹ Conditions (a), (b), and (c) are as follows: (a) 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 insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. (b) Exposed live parts on one side and grounded parts on the other side. (c) Exposed live parts on both sides of the workplace [not guarded as provided in Condition (a) with the operator between.			

The importance of working clearances cannot be overstated. At any time, when working with live electrical systems, there is the possibility of an arcing fault causing an arc flash where the current explosively flows through ionized air at 35,000 °F causing incurable burns, hearing loss, collapsed lungs, or even death from the electricity of flying metal shrapnel.

As an electrical contractor working in a facility where the possibility of arc flash exists, check to see if an arc flash assessment has been performed on electrical equipment on which you will be working. If it has, follow that specific guidance. If it has not, perform (or have a qualified vendor perform) the arc flash assessment. Refer to NFPA 70E (NFPA 70E is a National Consensus Standard which is incorporated by reference within the OSHA standards) for specific guidance appropriate to the facility's specific electrical equipment.

Note: NFPA 70E is a National Consensus Standard which is incorporated by reference within the OSHA standards; specifically, Appendix A to Subpart S, 29 CFR 1910. Failure to comply with NFPA 70E is citable under the general duty clause.

Confined and Enclosed Spaces

When working in confined and/or enclosed spaces containing exposed energized parts, adequate illumination will be provided to ensure that work may be performed safely.

When working in confined and/or enclosed spaces containing exposed energized parts, employees will be protected from inadvertent contact with these parts with company provided protective shields, barriers, or other insulating materials.

Enclosed Spaces and Working Underground:

“Underground enclosed spaces” refers to **manholes and vaults** that contain operating transmission and distribution equipment.

Employees will enter underground enclosed spaces under the provisions of our Permit Required Confined Space Program found in our Safety Program.

Training:

Training for Unqualified Persons:

Unqualified persons will be trained in and be familiar with any of the electrical safety related practices that are necessary for their safety.

Note: Unqualified persons will not be permitted to enter spaces that are required to be accessible to qualified employees only unless the electric conductors and equipment involved are in an electrically safe work condition.

Also see NFPA 70E.

Extension Cords

29 CFR 1926.405 - Wiring methods, components, and equipment for general use

29 CFR 1926.416 - General requirements

Extension cords shall not replace permanent wiring and the following safety precautions will be adhered to:

- a. Inspect the cord for cracks and cuts.
- b. Cord must have a three prong plug for grounding.
- c. Use the shortest continuous length of cord possible. Cords may not be spliced together.
- d. Make certain the cord does not lay in water.
- e. Ensure cord is properly rated for the job.
- f. Secure and route cords out of the traffic flow to prevent tripping.
- g. Defective cords will be tagged and removed from service.
- h. Most importantly, an extension cord used on a job site **MUST** be used with a ground fault circuit interrupter (GFCI).

Ground Fault Circuit Interrupters

29 CFR 1926.404 - Wiring design and protection

A ground fault circuit interrupter (GFCI) provides protection for all 120-volt, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring by detecting lost current resulting from a short, overheating, and/or ground fault. It should be noted that an extension cord into which electrical devices are plugged are not part of the permanent wiring; therefore, GFCI's are required.

A GFCI will "trip" when the amount of current amperes going to an electrical device in the hot conductor and the amount of current returning from an electrical device differs by approximately 5 milliamps. The GFCI can interrupt the current within as little as 1/40th of a second.

The current that is missing is being lost through a ground fault, whether it is in the actual grounding, a short in the equipment, or electricity going through the employee to the ground.

A GFCI will not protect an employee who comes in contact with two hot wires or a hot wire and a neutral wire. A GFCI will provide protection against fires, overheating, damage to insulation, and, the most common form of electrical shock hazard -- the ground fault. GFCI's must be tested before use.

Hazardous Job Site Chemical Awareness and Exposure

Employees of KirbyCo Builders may encounter various hazardous chemicals while performing their work duties. If employees have been properly trained on a particular hazard, they may continue work as required. If employees have not been trained on the hazard they encounter, they are to stop work immediately and notify their supervisor.

Per Hazard Communication, located at 29 CFR 1910.1200, we will keep the SDS's on site and readily available for each chemical to which we may be exposed. This information will be provided by the facility operator.

Asbestos Awareness

NIOSH Pocket Guide to Chemical Hazards - Asbestos

On some job sites, employees may have potential exposure to asbestos if precautionary steps noted below are not taken. Asbestos can be found in older tile flooring, pipe and mechanical insulation, plaster, fireproofing, soundproofing, roofing materials, and in sprayed-on materials located on beams, in crawl spaces, and between walls. Undisturbed, it is perfectly safe.

Asbestos is not a specific mineral, but rather a fibrous form of various minerals. It is a remarkable product because it is resistant to corrosive chemicals, it is a nonconductor of electricity, it has a high tensile strength (equal to that of steel wire), and is resistant to heat (it will not burn, but will disintegrate at extremely high temperatures). Some forms of asbestos, such as chrysotile, can be spun into thread. In fact, one pound of chrysotile can produce 30,000 feet of thread -- it is that fine. Other types of asbestos have fibers which cannot be spun, but are excellent for their frictional properties (brakes) and their insulation and sound deadening properties. The actual minerals found in asbestos include iron, magnesium, silica, and water. Asbestos is a truly remarkable product which has been serving mankind since the ancient Greeks and Romans.

Unfortunately, asbestos has a down side that has been discovered and statistically documented in recent years -- it is hazardous to your health.

There are two types of asbestos, friable and non-friable.

Friable asbestos can be crumpled with hand pressure and is likely to emit minute fibers that can cause serious long term health effects. Fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable.

Non-friable asbestos, undisturbed, poses no health risk. Vinyl-asbestos floor tile or roofing felt are considered non-friable if intact and generally do not emit airborne fibers unless subjected to sanding, sawing and other aggressive operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut or sawed, or if they are broken.

The health hazards associated with asbestos are caused by the microscopic fibers which, when released, enter the deepest portion of the lung (past your natural defenses such as hairs, mucus, cilia, and macrophages). Scar tissues can develop and the lung stiffens thus reducing gas exchange. This is called asbestosis. Another disease associated with asbestos is lung cancer. High exposure levels of asbestos increases one's chance of lung cancer by a factor of five. Mesothelioma, a disease caused primarily by exposure to amosite and crocidolite, can be fatal. Lastly, though not likely, it is possible to get cancer of the stomach and colon.

The health hazards associated with asbestos are chronic and, as such, present themselves after a long period of time.

Asbestos Awareness Training is required for all employees who work in areas that contain or may contain asbestos. This training will be documented.

Steps to avoid asbestos exposure:

- a. Under no circumstances will asbestos containing material (ACM) or presumed asbestos containing material (PACM) be disturbed during work activities.
- b. If you believe the materials you will be working with contain asbestos, do not disturb the material and contact your supervisor.
- c. Obey all asbestos warning signs and labels. ACM and PACM will not be disturbed.
- d. If our employees are working on a multi-contractor worksite adjacent to a Class I asbestos abatement job and possible exposure occurs because of inadequate containment (an unlikely scenario because not only would the containment be faulty, the negative pressure system would have to fail), they are to immediately remove themselves from the area until the breach and containment systems is repaired.
- e. All exposure to thermal system insulation, sprayed-on, and troweled-on surfacing material will be assumed to be asbestos exposure unless results of laboratory analysis show that the material does not contain asbestos.

For the record, permissible exposure to airborne asbestos fibers may not exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) averaged over the 8-hour workday, and 1 fiber per cubic centimeter of air (1.0 f/cc) averaged over a 30-minute work period.

Crystalline Silica Awareness

Silica, Crystalline (Respirable Size), National Institute of Health

Crystalline Silica can be readily found on many job sites in rocks, as well as many concrete and masonry products. Crystalline Silica can be released in the air when employees are performing such tasks as:

- a. Chipping, hammering, drilling, crushing, or hauling rock.
- b. Abrasive blasting.
- c. Sawing, hammering, drilling, or sweeping concrete or masonry.

Unprotected respiratory exposure to crystalline silica may cause a lung disease called silicosis as well as cancer and death.

Occupational silica exposure is completely preventable through employee training, use of a silica substitute, use of engineering controls, improved work practices, and, lastly, use of personal protective equipment.

Employees who are potentially exposed to an environment containing airborne concentrations of silica will receive training prior to working with silica and receive periodic refresher training after work has started.

Employee Information and Training

We will ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

Additionally, we must ensure that our employees can demonstrate knowledge and understanding of at least the following:

- a. The health hazards associated with exposure to respirable crystalline silica;

Silicosis is caused by exposure to respirable crystalline silica dust. Crystalline silica is a basic component of soil, sand, granite, and most other types of rock, and it is used as an abrasive blasting agent. Silicosis is a progressive, disabling, and often fatal lung disease. Cigarette smoking adds to the lung damage caused by silica.

Silicosis (especially the acute form) is characterized by shortness of breath, fever, and cyanosis (bluish skin); it may often be misdiagnosed as pulmonary edema (fluid in the lungs), pneumonia, or tuberculosis. Severe mycobacterial or fungal infections often complicate silicosis and may be fatal in many cases.

Three types of silicosis:

- Chronic silicosis: Usually occurs after 10 or more years of exposure to crystalline silica at relatively low concentrations
- Accelerated silicosis: Results from exposure to high concentrations of crystalline silica and develops 5 to 10 years after the initial exposure.
- Acute silicosis: Occurs where exposure concentrations are the highest and develops after a few months or as long as 2 years following exposures to extremely high concentrations of respirable crystalline silica.

- b. Specific tasks in the workplace from Table 1 that could result in exposure to respirable crystalline silica;
- c. Specific measures we have implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;

Engineering controls would include local exhaust ventilation, blasting cabinets, and establishing a clearly identified exposure area.

Work practice controls would include use of water sprays, wet methods for cutting, chipping, drilling, sawing, grinding, etc.

Eating, drinking, or smoking near crystalline silica dust is prohibited.

Employees will wash hands and face before eating, drinking or smoking away from silica exposure area.

Personal protective equipment would include appropriate half-face or full face respirator.

- d. The contents of 29 CFR 1926.1153;
- e. The identity of the competent person designated by the employer in accordance with paragraph (g)(4) of 29 CFR 1926.1153; and
- f. The purpose and a description of the medical surveillance program required by paragraph (h) of 29 CFR 1926.1153.

We will make a copy of 29 CFR 1926.1153 readily available and without cost to our employees covered by this program.

NIOSH Safety Recommendations:

NIOSH recommends the following measures to reduce crystalline silica exposures at the job site and prevent silicosis and silicosis-related deaths:

- a. Prohibit silica sand (or other substances containing more than 1% crystalline silica) as an abrasive blasting material and substitute less hazardous materials.
- b. Conduct air monitoring to measure worker exposures.
- c. Use containment methods such as blast-cleaning machines and cabinets to control the hazard and protect adjacent workers from exposure.
- d. Practice good personal hygiene to avoid unnecessary exposure to silica dust.
 1. Wash hands and face before eating.
 2. No eating, drinking or tobacco products in the blasting area.
 3. Shower before leaving work site.
 4. Vehicles parked away from contaminated area.
- e. Wear washable or disposable protective clothes at the job site; shower and change into clean clothes before leaving the job site to prevent contamination of cars, homes, and other work areas.
- f. Use respiratory protection when source controls cannot keep silica exposures below the NIOSH REL.
- g. Provide periodic medical examinations for all workers who may be exposed to crystalline silica.
- h. Post signs to warn workers about the hazard and to inform them about required protective equipment.
- i. Provide workers with training that includes information about health effects, work practices, and protective equipment for crystalline silica.
- j. Report all cases of silicosis to the state health department.

Lead Hazard Awareness:

Pure lead (Pb) is a heavy metal at room temperature and pressure, and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

OSHA standard 29 CFR 1926.62, addresses occupational exposure to lead in the construction industry. The word “lead” within this standard refers to elemental lead, all inorganic lead compounds, and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

There may be times when employees are working within the vicinity of lead or lead-containing materials.

Under no circumstances will employees be exposed to lead above the action level which, for lead, is 30 micrograms of lead per cubic meter of air ($30 \mu\text{m}^3$), averaged over an 8-hour workday. As a matter of interest, the permissible exposure limit (PEL) for lead is 50 micrograms of lead per cubic meter of air ($50 \mu\text{m}^3$), averaged over an 8-hour workday.

Lead found in paints, coatings, and compounds that are undisturbed, pose no risk of hazard exposure and work around these items do not require respirators, special clothing, or negative pressure enclosures.

Care will be taken by all employees to not abrade, remove, touch, or in any way disturb lead or lead containing compounds within the work area.

Contractors who actually abate lead do so under the provisions of the above lead standard which precludes lead from escaping into the surrounding areas by negative pressure enclosures and other methods.

As a point of interest, persons whom perform lead abatement have to have received special training, be licensed, and be part of a medical surveillance program.

To drive home the point of the importance of leaving lead at the job site undisturbed and avoided, employees must be aware of the health hazards associated with lead exposure.

The below is extracted from 29 CFR 1910.1025 App A, Substance data sheet for occupational exposure to lead:

II. HEALTH HAZARD DATA

A. "Ways in which lead enters your body". When absorbed into your body in certain doses, lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed. Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume, or mist it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion. A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in

your blood stream, lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

B. "Effects of overexposure to lead" - (1) "Short term (acute) overexposure". Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(2) "Long-term (chronic) overexposure". Chronic overexposure to lead may result in severe damage to your blood - forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain. Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy. Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible. Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to

have birth defects, mental retardation, behavioral disorders or die during the first year of childhood. Overexposure to lead also disrupts the blood - forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(3) "Health protection goals of the standard". Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that a worker's blood lead level (BLL, also expressed as PbB) be maintained at or below forty micrograms per deciliter of whole blood (40 ug/dl). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 ug/dl to minimize adverse reproductive health effects to the parents and to the developing fetus. The measurement of your blood lead level (BLL) is the most useful indicator of the amount of lead being absorbed by your body. Blood lead levels are most often reported in units of milligrams (mg) or micrograms (ug) of lead (1 mg=1000 ug) per 100 grams (100g), 100 milliliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometime BLLs are expressed in the form of mg percent or ug percent. This is a shorthand notation for 100g, 100 ml, or dl. (References to BLL measurements in this standard are expressed in the form of ug/dl.)

BLL measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. BLL measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead - related diseases, however, has focused heavily on associations between BLLs and various diseases. As a result, your BLL is an important indicator of the likelihood that you will gradually acquire a lead - related health impairment or disease.

Once your blood lead level climbs above 40 ug/dl, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular BLL in a given person will cause a particular effect. Studies have associated fatal encephalopathy with BLLs as low as 150 ug/dl. Other studies have shown other forms of diseases in some workers with BLLs well below 80 ug/dl. Your BLL is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated BLLs. The longer you have an elevated BLL, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage. The best way to prevent all forms of lead - related impairments and diseases -- both short term and long term -- is to maintain your BLL below 40 ug/dl. The provisions of the standard are designed with this end in mind.

Hoists

29 CFR 1926.552 - Material hoists, personnel hoists, and elevators

A hoist is a useful mechanical device which gives one the ability to lift and move heavy objects – not people. No person is to ride on a hoist. As with all mechanical devices, improper use may lead to injury. You must know what you are doing and you must be careful.

Before use, hoists must be inspected for bent or damaged components. Particular attention should be paid to guarding. Fingers and loose clothing could be snagged in exposed mechanisms. Chains, cables, or rope slings must not be kinked, twisted, or frayed.

Loads must be properly rigged with hooks or slings, and they must never exceed the hoist's rated capacity.

Ensure that the area around the hoist is free from debris and, most importantly, people. Do not allow yourself or others to be under a hoisted load.

Ladders

29 CFR 1926.1050 - Scope, application, and definitions applicable to this subpart

29 CFR 1926.1051 - General requirements

29 CFR 1926.1053 - Ladders

29 CFR 1926.1060 - Training requirements

All employees using ladders are required by OSHA standard to receive training and understand proper procedures for ladder use before using a ladder in a work situation.

All ladders will be inspected periodically and defective ladders will be tagged and placed out of service.

American National Standards Institute (ANSI) and NIOSH approval labels should never be covered with paint or tape. Having ladders that are constructed to standard will prevent collapse and resultant falls.

Specific operational procedures for ladders directly relating to the elimination of fall hazards are listed below:

- a. A stairway or a ladder will be provided at all personnel points of access where there is a break in elevation of 19 inches or more.
- b. Ladders will never be overloaded.
- c. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when a ladder is in position for use.
- d. Ladders will not be tied or fastened together unless they are so designed.
- e. Portable ladders used for gaining access to an upper level will extend at least 3 feet above the upper landing surface or the ladder will be secured at its top.
- f. Ladders must be free of oil, grease, or other slipping hazards.
- g. Ladders must be used for the purpose for which they were designed.
- h. Non-self-supporting ladders will be used at such an angle so that the horizontal distance from the top support to the foot of the ladder is approximately $\frac{1}{4}$ of the working length of the ladder.
- i. Ladders will only be used on stable and level surfaces unless secured to prevent displacement.
- j. Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement.

- k. Ladders placed in any location where they can be displaced by job site activities or traffic will be secured to prevent accidental displacement, or a barricade will be used to keep the activities or traffic away from the ladder.
- l. The area around the top and bottom of the ladder shall be kept clear.
- m. Ladders shall not be moved, shifted, or extended while occupied.
- n. The top step of a stepladder shall not be used as a step.
- o. Portable ladders with structural defects will be immediately marked in a manner that readily identifies them as defective and removed from service until repaired.
- p. When ascending or descending a ladder, one must face the ladder.
- q. Employees must use at least one hand to grasp the ladder when progressing up and/or down the ladder.
- r. Employees are not to carry any object or load that could cause loss of balance and a resultant fall.

Fixed ladders where the length of climb is less than 24 feet but the top of the ladder is greater than 24 feet above the lower level must have cages, wells, ladder safety devices, or self-retracting lifelines.

Fixed ladders where the length of climb equals or exceeds 24 feet shall have at least one of the following:

- a. Ladder safety devices.
- b. Self-retracting lifelines and rest platforms not exceeding 150 feet.
- c. A cage or well, and multiple ladder sections not exceeding 50 feet in length. At the maximum interval of 50 feet, ladder sections will be offset on landing platforms.

Lighting

29 CFR 1926.56 - Illumination

A competent person will ensure that all work areas have adequate lighting. Adequate lighting serves a two-fold purpose – allowing tasks to be more readily performed as well as providing the additional safety factor of being seen by persons not involved with the work – especially vehicular traffic.

If generators are used for auxiliary lighting, they will be operated and maintained by authorized persons who are competent by training or experience.

LP - Gas Storage

29 CFR 1926.153 - Liquefied petroleum gas (LP-Gas)

Liquefied petroleum gas (LP-Gas) is sometimes used on job sites to provide fuel for temporary heating devices.

LP-Gas systems must have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type. All cylinders must be DOT approved.

Rules for inside storage (under construction standards) are simple -- **it is not allowed!**

Note: Under industry standards, up to 300 pounds of LP-Gas may be stored, with adherence to specific safety procedures, is allowed.

Rules for outside storage requires that containers be in a suitable ventilated enclosure or otherwise protected against tampering. At least one approved portable fire extinguisher having a rating of not less than 20-B:C must be readily available.

The distances from buildings or groups of buildings that containers must be stored are as follows:

<u>Quantity of LP-Gas Stored</u>	<u>Distance in Feet</u>
500 lbs. or less	0
501 to 6,000 lbs.	10
6,001 to 10,000 lbs.	20
over 10,000 lbs.	25

Storage must not be near building openings or vehicular traffic.

LP - Gas Temporary Heating

29 CFR 1926.153 - Liquefied petroleum gas (LP-Gas)

When LP-Gas is used for temporary heating on units that provide over 7,500 BTU per hour or use containers greater than 2.5-pound maximum water capacity [nominal 1-pound LP-Gas capacity], the following will apply:

- a. Container valves, connectors, regulators, manifolds, piping and tubing must not be used as structural supports for the heaters.
- b. The LP-Gas containers and all associated equipment including hoses must be located so as to minimize exposure to high temperatures or physical damage.
- c. The maximum water capacity of individual containers must be 245 pounds [nominal 100-pound LP-Gas capacity].

Heaters that are not integral heater-container units, which are connected by hose to the LP-Gas, must be at least 6' from the container. Blower and radiation type heaters must not be directed toward the container or any other unit within 20 feet. Heaters specifically designed for attachment to the container are permitted as long as the heat is not directed to the LP-Gas container.

Machine Guarding

29 CFR 1926.307 - Mechanical power-transmission apparatus

Most injuries that occur when operating a machine happen at the point of operation – the point on a machine where the actual work (cutting, bending, and spinning) occurs. This is also the point where guards can protect fingers and hands exposed to that danger. Machine guarding also protects employees from other dangers such as flying pieces of metal, sparks, gears, belts, and rotating parts.

The most common types of machines on job sites are power tools which often have guards to prevent injury.

Accident prevention in this area is a function of machine design – engineering controls – and operator training. Types of machine guarding are almost as numerous as types of machines – the most common being a physical barrier to prevent accidental insertion of body parts. Guards are vital for safety reasons and machine guards designed into a machine should never be altered or removed. The speed and tremendous forces involved in modern machines are such that severe injury or even death could occur without warning and without even slowing the machine down.

Training and proper work methods go a long way toward reducing machine accidents. Like all safeguards, there is generally a way to bypass safety features that are engineered into machines. This is sometimes done to increase speed or just to make one's job easier. This could result in a tragic, avoidable accident. The few seconds saved could cause a lifetime of grief. **Do not bypass safety systems.**

Operate all machines according to the instructor's manual and follow all safety procedures.

Machinery

Spinning, pounding, and moving – gears, pulleys, levers – electricity, fuel, and hydraulics – action, reaction, force: danger! Machinery takes energy and performs a task or a multitude of tasks. Machinery, from a safety standpoint, is a collection of individual, simple machines (pulleys, gears, etc.) combined to work in harmony to accomplish a specific job.

The danger is obvious: the power, speed, movement, and momentum of machinery is not going to be altered by something as insignificant as an employee's finger, hand, or even body.

How does one deal with the dangers of machinery?

- a. **Never** operate any machinery until you have received proper training and you thoroughly understand safety procedures as well as procedures to follow for adjustments, power interruption, jamming, lubrication, and inspection.
- b. Ensure the guarding systems are in place, functioning properly, and have not been altered or removed.
- c. If a hazard assessment of the machinery operation dictates specific personal protective equipment (PPE), wear it!
- d. From purely a safety standpoint, think of any power operated item with moving parts as machinery. This would include items as diverse as a small electric drill to an 80,000-pound tractor-trailer.

Material Storage

29 CFR 1926.250 - General requirements for storage

General Requirement for Storage

All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads shall not be exceeded.

Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.

When a difference in road or working levels exist, means such as ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.

Material Storage

Material stored inside buildings under construction shall not be placed within 6 feet of any hoistway or inside floor openings, nor within 10 feet of an exterior wall which does not extend above the top of the material stored.

Each employee required to work on stored material in silos, hoppers, tanks, and similar storage areas shall be equipped with personal fall arrest equipment meeting the requirements of Fall Protection of this Safety Manual.

Noncompatible materials shall be segregated in storage.

- a. Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.

Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.

Brick stacks shall not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4-foot level.

When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.

Used lumber shall have all nails withdrawn before stacking.

Lumber shall be stacked on level and solidly supported sills and shall be so stacked as to be stable and self-supporting.

Mold & Mildew

Molds and mildew are fungi that can be found inside any building in which employees of KirbyCo Builders are working. Within the United States, there are about 1,000 species of mold.

Problems may arise when mold starts eating away at materials, affecting the look, smell, and possibly, with the respect to wood-framed buildings, affecting the structural integrity of the buildings.

Molds can grow on virtually any substance, as long as moisture or water, oxygen, and an organic source, **such as wood**, are present. Molds reproduce by creating tiny spores (viable seeds) that usually cannot be seen without magnification. In fact, mold spores continually floating through both the indoor and outdoor air and these spores, alone, **do not create a problem**.

The problem occurs when mold spores land on a damp spot and begin growing. They digest whatever they land on in order to survive. Molds can grow on wood, paper, carpet, foods, insulation, and even dust and dirt that gathers in moist areas a building.

From a contractor standpoint, over time, molds can gradually damage building materials and furnishings. If left unchecked, mold can eventually cause structural damage to a wood framed building, weakening floors and walls as it feeds on moist wooden structural members.

Most molds do not present a true health hazard in the general population. Molds can, however, cause adverse effects by producing allergens and the allergic reactions to mold can be either immediate or delayed. Allergic responses would include hay fever-type symptoms such as runny nose and red eyes.

The work KirbyCo Builders performs as a contractor will not introduce molds into the workplace.

Should mold be discovered on any of our job sites, we will notify the owner and advise the owner to seek a professional mold remediation contractor.

Should mold exist on a job site where our employees are working, the following precautionary steps will be taken:

- a. Dust mask may be used for personal employee comfort.
- b. Items damaged by mold may be discarded a general waste with no special precautions needed.

Rigging for Material Handling

29 CFR 1926.251 - Rigging equipment for material handling

Note: The below information is applicable to the following crane types and operations:

- 1. Articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.**
- 2. Articulating/knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. Such sheet goods or packaged materials include, but are not limited to: sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.**

Note: The above articulating/knuckle-boom crane exclusion does not apply when it is used to 1) hold, support or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure; 2) when the material being handled is a prefabricated component such as precast concrete members or panels, roof trusses, prefabricated building sections such as, but not limited to: floor panels, wall panels, roof panels, roof structures, or similar items; and, 3) when the material being handled by the crane is a structural steel member (for example, steel joists, beams, columns, steel decking (bundled or unbundled) or a component of a systems-engineered metal building.

- 3. Other rigging requirements are found in the applicable provisions of Cranes and Derricks in Construction, found in Section III of this program, specifically, 1926.1401, 03, 04, 07, 08, 23, 27, 31, & 33.**

Prior to use on each shift, rigging equipment, including slings and all fastenings and attachments, will be inspected for damage or defects by a qualified person. Additional inspections will be performed during sling use and where service conditions warrant, to ensure that it is safe.

Defective/damaged equipment including slings and rigging will not be used and will be immediately removed from service.

Per 1926.251(a)(3), rigging equipment, when not in use, will be removed from the immediate work area and stored properly so as not to present a hazard to employees.

Under no circumstances may any employee be under a suspended load.

29 CFR 1926.251, *Rigging Equipment for Material Handling*, contains Tables H-1 to H-2 which indicate rated capacities for various types of slings and grommets, safe working loads for shackles, number and spacing of U-Bolt Wire Rope Clips, and maximum allowable wear at any point of link.

Welded alloy steel chain slings must have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer. Of course, hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, will have a rated capacity at least equal to that of the chain.

Rigging equipment will **not be loaded in excess** of its recommended safe working load and load identification will be attached to the rigging.

Specific requirements for use and inspection of alloy steel chains, wire rope, natural rope and synthetic fiber, synthetic webbing, and shackles are found in the above standards.

Scissor-Lift Fall Protection

What type of fall protection is required for scissor-lifts? This apparently simple question has a relatively simple answer. However, how it is derived is somewhat complicated because OSHA does not have a standard to deal with this issue.

Clearly, there is a hazard – falling from height. However, fall protection while using a scissor-lift is not covered in the fall protection, scaffold and ladder fall protection, nor aerial lift fall protection standards.

Section 5(a)(1) of the Occupational Safety and Health Act, commonly referred to as the General Duty Clause is a “catch all clause” which states: "Each employer shall furnish to each of its employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

In the absence of a specific standard relating to a safety or health risk, the above is the reference OSHA will cite.

When assessing compliance efforts, OSHA considers the requirements of pertinent national consensus standards. In the case of scissor-lifts, ANSI/SIA A92.6-1990, Self-propelled Elevated Work Platforms, and ANSI/SIA A92.3, Manually Propelled Elevating Aerial Platforms, are used.

Fall protection is provided by employees maintaining firm footing on the lift and using guardrails. Under no circumstances are employees to place ladders or other items on the lift to extend their reach. Per ANSI/SIA standards, with which OSHA concurs, "Use of planks, ladders, or any other device on the aerial platform for achieving additional height or reach shall be prohibited." Use of these items negates the value of the guardrail system and may possibly exceed the scissor-lift's design limits for stability.

Further, personnel are not to tie off to items adjacent to the lift – the most obvious reasons are: the anchorage point may not be sufficient and movement of the lift would pull the employee out of and off of the lift.

If, for some reason, guardrails are not being provided for specific operational reasons, then a personal fall protection system may be used which would include an anchorage point, lanyard and safety harness.

However, this option is severely limited because its design would have to be approved by a registered engineer or the scissor-lift manufacturer would have to approve the use of the lift as an anchorage.

Under ideal conditions, rarely found on a construction site, scissor-lifts may be moved with the lift extended. However, should obstacles, debris, drop-offs, holes, depressions, ramps or other hazards be present, the lift must be lowered prior to movement.

Finally, if the employee leaves the safety of the scissor-lift platform while working at height, some sort of approved fall protection system must be employed.

Signs & Tags

29 CFR 1926.200 - Accident prevention signs and tags

When appropriate, signs and tags will be used to warn of specific hazards. Types of signs are classified according to their use, and their design is regulated by OSHA standard. All personnel will be instructed in the meaning of the various types of signs. Sign usage includes:

<u>Type of Sign</u>	<u>Sign Coloring</u>	<u>Sign Warning</u>
Danger Signs	Red, Black & White	Indicates immediate danger and denotes that special precautions are necessary.
Caution Signs	Yellow Background	Warns of a potential hazard or cautions against an unsafe practice.
Safety Instruction Signs	White Background	Used to provide general instructions and suggestions relative to safety measures.

The wording on signs must be positive, clear, concise, and easy to understand or the sign loses its value.

Accident prevention tags are to warn of hazardous or potentially hazardous conditions that are out of the ordinary, unexpected, or not readily apparent.

They are not used where signs, guarding or other positive means of protection are used. All tags must have both:

A signal word: "Danger," "Caution," "Warning," "BIOHAZARD" (or its symbol)

A major message: "High Voltage" or "Do not start". (Major messages indicate the specific hazardous condition.)

<u>Type of Tag</u>	<u>Tag Coloring</u>	<u>Tag Warning</u>
Danger Tags	Red	Indicate an immediate hazard that presents a threat of death or serious injury.
Caution Tags	Yellow	Indicate a non-immediate hazard or unsafe practice that presents a lesser threat of injury.
Warning Tags	Orange	Indicate a hazard between "Danger" and "Caution".

Pay attention to signs and tags, and realize that they are in place for only one reason – your safety.

Silica Exposure

29 CFR 1926.1153 Respirable Crystalline Silica

Construction employers must comply with all requirements of the standard by September 23, 2017, except requirements for laboratory evaluation of exposure samples, which begin on June 23, 2018.

Overview

Our Silica program applies to all work place exposures to respirable crystalline silica. The only exception is when employee exposure will remain below 25 micrograms per cubic meter of air (25 µg/m³) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

Definitions

The following definitions apply to our silica program will help ensure that our employees fully understand the information provided.

Action level means a concentration of airborne respirable crystalline silica of 25 µg/m³, calculated as an 8-hour TWA.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Competent person means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in paragraph (g) of 29 CFR 1926.1153.

Employee exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

High-efficiency particulate air [HEPA] filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

Objective data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Physician or other licensed health care professional [PLHCP] means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by paragraph (h) of 29 CFR 1926.1153.

Respirable crystalline silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality – Particle Size Fraction Definitions for Health-Related Sampling.

Specialist means an American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine.

This section means this respirable crystalline silica standard, 29 CFR 1926.1153.

Specified Exposure Control Methods

If any of our employees are engaged in a task identified on Table 1 below, we will fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task.

Exception: We must assess and limit the exposure of our employees to safe levels of respirable crystalline silica using the alternative exposure control methods following Table 1.

Table 1: Specified Exposure Control Methods when Working with Materials Containing Crystalline Silica			
Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	– When used outdoors.	None	APF 10
	– When used indoors or in an enclosed area.	APF 10	APF 10

Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	<p>For tasks performed outdoors only:</p> <p>Use saw equipped with commercially available dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.</p>	None	None
Walk-behind saws	<p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>		
	– When used outdoors.	None	None
	– When used indoors or in an enclosed area.	APF 10	APF 10
Drivable saws	<p>For tasks performed outdoors only:</p> <p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>	None	None
Rig-mounted core saws or drills	<p>Use tool equipped with integrated water delivery system that supplies water to cutting surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>	None	None
Handheld and stand-mounted drills (including impact and rotary hammer drills)	<p>Use drill equipped with commercially available shroud or cowling with dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</p> <p>Use a HEPA-filtered vacuum when cleaning holes.</p>	None	None
Dowel drilling rigs for concrete	<p>For tasks performed outdoors only:</p> <p>Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater</p>	APF 10	APF 10

	<p>efficiency and a filter-cleaning mechanism.</p> <p>Use a HEPA-filtered vacuum when cleaning holes.</p>		
Vehicle-mounted drilling rigs for rock and concrete	<p>Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.</p> <p>OR</p>	None	None
	<p>Operate from within an enclosed cab and use water for dust suppression on drill bit.</p>	None	None
Jackhammers and handheld powered chipping tools	<p>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</p>		
	<p>– When used outdoors.</p>	None	APF 10
	<p>– When used indoors or in an enclosed area.</p>	APF 10	APF 10
	<p>OR</p> <p>Use tool equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</p>		
	<p>– When used outdoors.</p>	None	APF 10
	<p>– When used indoors or in an enclosed area.</p>	APF 10	APF 10
Handheld grinders for mortar removal (i.e., tuckpointing)	<p>Use grinder equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.</p>	APF 10	APF 25
Handheld grinders for uses other than mortar removal	<p>For tasks performed outdoors only:</p> <p>Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface.</p>	None	None

	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	OR Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.		
	– When used outdoors.	None	None
	– When used indoors or in an enclosed area.	None	APF 10
Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. OR	None	None
	Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None	None
Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only:		
	Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to	None	None

	minimize dust emissions.		
	For cuts of four inches in depth or less on any substrate:		
	Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. OR	None	None
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.	None	None
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab.	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions. OR	None	None
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None

When implementing the control measures specified in Table 1, we must:

- a. Provide a method of exhaust to minimize the accumulation of visible airborne dust for tasks performed indoors or in enclosed areas.
- b. Apply water at flow rates sufficient to minimize release of visible dust for tasks performed using wet methods
- c. If an enclosed cab or booth is used, we must ensure that it:
 1. Is maintained as free as practicable from settled dust;
 2. Has door seals and closing mechanisms that work properly;
 3. Has gaskets and seals that are in good condition and working properly;
 4. Is under positive pressure maintained through continuous delivery of fresh air;
 5. Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 μm range (e.g., MERV-16 or better); and
 6. Has heating and cooling capabilities.

If one of our employees performs more than one task on Table 1 during the course of a single work shift, the total time for all tasks will be considered.

If it's more than 4 hours in total, the employees must use the respiratory protection specified in the > 4 hours/shift column. If combined it's less than four hours, employee will follow the guidelines in the \leq 4 hours/shift column.

Alternative Exposure Control Methods

If we are unable to fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1, we must ensure the following requirements are in place.

Permissible Exposure Limit (PEL)

We must ensure that none of our employees are exposed to an airborne concentration of respirable crystalline silica in excess of 50 $\mu\text{g}/\text{m}^3$, calculated as an 8-hour TWA.

Exposure Assessment

We have to assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level. This can be accomplished using one of the following options:

Performance Option:

The performance option requires that we must assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

Scheduled Monitoring Option:

If we use the scheduled monitoring option, we have to have provide initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, and in each work area.

Where several employees perform the same tasks on the same shift and in the same work area, we may sample a representative fraction of these employees. If we use representative sampling, we must sample the employees who are expected to have the highest exposure to respirable crystalline silica.

If initial exposure monitoring indicates that certain employee's exposures are below the action level, we may discontinue monitoring for those employees.

If the most recent exposure monitoring indicates that our employee's exposures are at or above the action level but at or below the PEL, we will ensure that the monitoring is repeated within six months of those results.

If the most recent exposure monitoring indicates that our employee's exposures are above the PEL, we will be sure to repeat the monitoring within three months of those results.

If the most recent exposure monitoring results (after the first round of monitoring) indicates that our employee's exposures are below the action level, then we will repeat the monitoring within six months of those results to determine if we need to continue monitoring.

If our repeat monitoring results indicate two consecutive measurements, taken seven or more days apart, are below the action level, we may discontinue monitoring for our employees whose exposures are represented by the monitoring.

Reassessment of Exposures:

It is our responsibility as the employer to provide a hazard free work place for our employees and if we have any reason to believe that new or additional exposures at or above the action level have occurred we will reassess employee exposures.

We will reassess exposures whenever we have a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level.

Methods of Sample Analysis:

We will ensure that all of our exposure monitoring samples are evaluated by a laboratory that analyzes air samples for respirable crystalline silica in accordance with the procedures in 1926.1153 - Appendix A.

Note: Requirements for laboratory evaluation of exposure samples are required to begin on June 23, 2018.

Employee Notification of Assessment Results:

We will individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees within five working days after completing an exposure assessment.

If an exposure assessment indicates that an employee is exposed to respirable crystalline silica above the PEL, we will provide them with a description of the corrective action being taken to reduce their exposure to within the PEL in the written notification.

Observation of Monitoring:

We will provide all affected employees, or their designated representatives, an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, we must provide the observer with protective clothing and equipment at no cost and must ensure that the observer uses such clothing and equipment correctly.

Methods of Compliance

Engineering and Work Practice Controls:

We must use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless we can demonstrate that such controls are not feasible.

Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, we will still use them to reduce our employee's exposure to the lowest feasible level.

We will then supplement those controls with the use of respiratory protection in accordance with our Respiratory Protection Program.

Abrasive Blasting:

We must also comply with other OSHA standards, in addition to the engineering and work practice controls previously discussed, if abrasive blasting is conducted using crystalline silica-containing blasting agents or if abrasive blasting is conducted on substrates that contain crystalline silica.

Respiratory Protection

Respiratory Protection Program

When respiratory protection is required by 29 CFR 1926.1153, we will use our respiratory protection program to provide each of our employee's an appropriate respirator that complies with the requirements of 29 CFR 1910.134.

Respiratory protection is required:

- a. Where specified by Table 1 - Specified Exposure Control Methods when Working with Materials Containing Crystalline Silica.
- b. For tasks not listed in Table 1, or where we do not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:
 1. Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls;
 2. Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and
 3. During tasks for which we have implemented all feasible engineering and work practice controls and those controls are not sufficient to reduce exposures to or below the PEL.

Specified Exposure Control Methods

If we are able to fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1 - Specified Exposure Control Methods when Working with Materials Containing Crystalline Silica, we will be considered to be in compliance with paragraph (e)(1) of 29 CFR 1926.1153 and the requirements for selection of respirators in 29 CFR 1910.134(d)(1)(iii) and (d)(3) with regard to exposure to respirable crystalline silica.

Housekeeping

We will not allow dry sweeping or dry brushing when it could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming, or other methods that minimize the likelihood of exposure are not feasible.

Our employees are not permitted to use compressed air to clean clothing or surfaces when it could contribute to employee exposure to respirable crystalline silica unless:

- a. The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
- b. No alternative method is feasible.

Written Exposure Control Plan

We will establish and implement a written exposure control plan that contains at least the following elements:

- a. A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
- b. A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
- c. A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
- d. A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

We will review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.

We will make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this program, their designated representatives, the Assistant Secretary, and the Director.

We will designate a competent person to implement the written exposure control plan and to make frequent and regular inspections of job sites, materials, and equipment.

Medical Surveillance

We will make medical surveillance available to our employees at no cost and at a reasonable time and place for each who will be required under this program to use a respirator for 30 or more days per year.

We will ensure that all medical examinations and procedures required by this program are performed by a Physician or other licensed health care professional or PLHCP.

Initial Examination

We must make available an initial baseline medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of 29 CFR 1926.1153 within the last three years. The examination must consist of:

- a. A medical and work history, with emphasis on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history;
- b. A physical examination with special emphasis on the respiratory system;
- c. A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film, no less than 14 x 17 inches and no more than 16 x 17 inches, or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader;
- d. A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course;
- e. Testing for latent tuberculosis infection; and
- f. Any other tests deemed appropriate by the PLHCP.

Periodic Examinations

We will make medical examinations available that include the procedures described in paragraph (h)(2) of 29 CFR 1926.1153 (except paragraph (h)(2)(v)) at least every three years, or more frequently if recommended by the PLHCP.

Information Provided to the PLHCP

We will ensure that the examining PLHCP has a copy of this standard, and must provide the PLHCP with the following information:

- a. A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;
- b. The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

- c. A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and
- d. Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

PLHCP's Written Medical Report for the Employee

We must ensure that the PLHCPs explain to our employees the results of the medical examination and provides them with a written medical report within 30 days of the medical examination performed. The written report must contain:

- a. A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;
- b. Any recommended limitations on the employee's use of respirators;
- c. Any recommended limitations on the employee's exposure to respirable crystalline silica; and
- d. A statement that the employee should be examined by a specialist (pursuant to paragraph (h)(7) of 29 CFR 1926.1153) if the chest X-ray provided in accordance with 29 CFR 1926.1153 is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

PLHCP's Written Medical Opinion for the Employer

We must also obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain **only** the following:

- a. The date of the examination;
- b. A statement that the examination has met the requirements of 29 CFR 1926.1153; and
- c. Any recommended limitations on the employee's use of respirators.

If the employee provides written authorization, the written opinion can also contain either or both of the following:

- a. Any recommended limitations on the employee's exposure to respirable crystalline silica;
- b. A statement that the employee should be examined by a specialist (pursuant to paragraph (h)(7) of 29 CFR 1926.1153) if the chest X-ray provided in accordance with 29 CFR 1926.1153 is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

We must ensure that each employee receives a copy of that written medical opinion within 30 days of each medical examination performed.

Additional Examinations

If the PLHCP's written medical opinion indicates that an employee should be examined by a specialist, we must make a medical examination by a specialist available within 30 days after receiving the PLHCP's written opinion.

We must ensure that the examining specialist is provided with all of the information that we provided to the PLHCP.

We must ensure that the specialist explains the results of the medical examination to the employee and provides them with a written medical report within 30 days of the examination that meets the requirements of paragraph (h)(5) (except paragraph (h)(5)(iv)) of 29 CFR 1926.1153.

We will also obtain a written opinion from the specialist within 30 days of the medical examination that meets the requirements of paragraph (h)(6) (except paragraph (h)(6)(i)(B) and (ii)(B)) of 29 CFR 1926.1153.

Communication of Silica Hazards to Employees

Hazard communication

We will include respirable crystalline silica in Hazard Communication program. This requires that we ensure that our employees have access to labels on containers of crystalline silica and safety data sheets.

Additionally, we will ensure our employees are trained in accordance with the provisions of HCS and the below information.

Employee Information and Training

We will ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

Additionally, we must ensure that our employees can demonstrate knowledge and understanding of at least the following:

- a. The health hazards associated with exposure to respirable crystalline silica;
- b. Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
- c. Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
- d. The contents of 29 CFR 1926.1153;
- e. The identity of the competent person designated by the employer in accordance with paragraph (g)(4) of 29 CFR 1926.1153; and
- f. The purpose and a description of the medical surveillance program required by paragraph (h) of 29 CFR 1926.1153.

We will make a copy of 29 CFR 1926.1153 readily available and without cost to our employees covered by this program.

Recordkeeping

Air Monitoring Data

We will make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica. This record will include at least the following information:

- a. The date of measurement for each sample taken;
- b. The task monitored;
- c. Sampling and analytical methods used;
- d. Number, duration, and results of samples taken;
- e. Identity of the laboratory that performed the analysis;
- f. Type of personal protective equipment, such as respirators, worn by the employees monitored; and
- g. Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

Objective Data

We will make and maintain an accurate record of all objective data relied upon to comply with the requirements of 29 CFR 1926.1153. This record will include at least the following information:

- a. The crystalline silica-containing material in question;
- b. The source of the objective data;
- c. The testing protocol and results of testing;
- d. A description of the process, task, or activity on which the objective data were based; and
- e. Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

Medical Surveillance

We will make and maintain an accurate record for each employee covered by medical surveillance under paragraph (h) of 29 CFR 1926.1153. The record will include the following information about the employee:

- a. Name and social security number;
- b. A copy of the PLHCPs' and specialists' written medical opinions; and
- c. A copy of the information provided to the PLHCPs and specialists.

Medical Record Retention

We will maintain medical records and make them available in accordance with 29 CFR 1910.1020, including that medical record for each employee be preserved and maintained for at least the duration of employment plus thirty (30) years.

Stairs

29 CFR 1926.1052 - Stairways

Stairways that are not a permanent part of the structure on which construction work is being performed must have landings of at least 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise. Additionally:

- a. Riser height and tread depth must be uniform within each flight of stairs.
- b. Where doors or gates open directly on a stairway, a platform will be provided, and the swing of the door must not reduce the effective width of the platform to less than 20 inches.
- c. Metal pan landings and metal pan treads, when used, must be secured in place before filling with concrete or other material.
- d. All parts of stairways will be free of hazardous projections, such as protruding nails.
- e. Slippery conditions on stairways will be eliminated before use.
- f. Except during stairway construction:
 1. Foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled at a later date, unless the stairs are temporarily fitted with solid material at least to the top edge of each pan. Temporary treads and landings will be replaced when worn below the level of the top edge of the pan.
 2. Foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.

Treads for temporary service will be made of wood or other solid material and installed the full width and depth of the stair.

Stairways having four or more risers or rising more than 30 inches will be equipped with:

- a. At least one handrail
- b. One stair rail system along each unprotected side or edge.

Tools - Hand

29 CFR 1926.300 - General requirements

29 CFR 1926.301 - Hand tools

All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition.

Here are basic procedures for the use of hand tools:

- a. Hand tools shall be used only for the purpose for which they are designed.
- b. Hand tools will be kept clean and, where appropriate, oiled.
- c. Hand tools which are damaged will not be used.
- d. Hand held cutting tools will be kept sharp and will be sheathed or retracted when not in use.
- e. When using a striking tool such as a hammer or chisel, safety glasses or safety goggles will be used.
- f. Do not force tools.
- g. If you are unfamiliar with the proper procedure for using a tool, ask your Supervisor for instruction.
- h. Power tools may be operated only by those persons who are qualified by training or experience.
- i. Do not alter guards on power tools; wear appropriate PPE.
- j. Electrical tools must be grounded and, in the absence of permanent wiring, a Ground Fault Circuit Interrupter must be used.
- k. Electric tools will not be lifted by their cords and pneumatic tools will not be lifted by their hoses.

Tools - Pneumatic Powered

29 CFR 1926.102 - Eye and face protection

29 CFR 1926.300 - General requirements

29 CFR 1926.302 - Power-operated hand tools

Pneumatic powered tools must be safeguarded whenever there are hazardous employee exposures. This is especially important for point of operation guarding.

Three specific hazards associated with pneumatic powered tools which are unique to their use are noise levels, tool retention, and air hose pressure.

Care must be taken to assure that noise levels are within acceptable limits (noise monitoring may be necessary) and, if required, engineering controls and/or ear protection will be employed.

Eye protection will be worn when using pneumatic powered tools in accordance with the owner/operator's manual.

- a. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
- b. Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- c. All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 p.s.i. pressure at the tool, shall have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- d. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment which meets the requirements of 29 CFR 1926 Subpart E. This would include eye, face, hand, head, and foot protection. The 30 p.s.i. requirement does not apply for concrete form, mill scale and similar cleaning purposes.

- e. The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- f. The use of hoses for hoisting or lowering tools shall not be permitted.
- g. All hoses exceeding 1/2-inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- h. Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 pounds or more per square inch) shall be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released.

Note: In lieu of the above, a diffuser nut which will prevent high pressure, high velocity release, while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection, shall be provided.

- i. Lastly, abrasive blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

Care must be taken to ensure that employees are not exposed to unsafe levels of respirable dust or crystalline silica.

The PEL for particles not otherwise regulated is 5.0 mg/m³. The operations of KirbyCo Builders would not exceed these PEL's and respiratory protection is not required.

Tools - Powder-Actuated

29 CFR 1926.102 - Eye and face protection

29 CFR 1926.300 - General requirements

29 CFR 1926.302 - Power-operated hand tools

A powder-actuated fastening tool propels a nail, pin, or fastener through an object to fasten it to another object. These tools, if misused, are extremely dangerous because essentially, they are similar to a pistol or rifle.

The speed of the projectile may range from 300 ft./second to 1290 ft./second.

Only trained and authorized persons may operate a powder actuated tool and, for safety, these tools should be kept secured when not in use.

Prior to use, the tool must be inspected and tested according to the manufacturer's instruction manual which should be kept with the tool.

Defective tools must not be used and they must be taken out of service.

Use of appropriate personal protective equipment – including, at least, eye/face and ear protection – is required not only for the operator, but also those employees in the vicinity. PPE will be in accordance with the owner/operator's manual.

On the job site, each tool should be accompanied by: 1) its container; 2.) the operator's instruction & service manuals; 3) the tool inspection record; and 4) service tools & accessories.

Tools must not be loaded until just before firing and, under no circumstances, are they to be pointed at any person. Hands must be kept clear of the open barrel end. A powder activated tool must never be left unattended – loaded or empty – for safety and security reasons.

Fasteners must not be driven into very hard or brittle materials such as cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick or hollow tile; easily penetrated materials unless these materials are backed by a substance; nor a damaged area caused by an unsatisfactory fastening. Of course, these tools must never be used in an explosive or flammable atmosphere.

Before fastening questionable material, the operator can determine its suitability by using a fastener as a center punch. If the fastener point does not easily penetrate, is not blunted, and does not fracture the material, initial test fastenings will be made in accordance with the manufacturer's instructions.

The tool must be held perpendicular to the work surface and in the event of a misfire, the operator must hold the tool firmly against the work surface and follow, exactly, the manufacturer's instructions.

Tools must be used with the correct shield, guard, or attachments recommended by the manufacturer.

Because the case and load are color coded, it is imperative that the operator can distinguish the colors of brass and nickel as well as gray, brown, green, yellow and red and purple.

Ventilation

29 CFR 1926.57 - Ventilation

There may be times in the course of work, such as grinding, cutting, sawing, sanding, etc. that hazardous dusts are released into the atmosphere that exceed the concentrations specified in the “Threshold Limit Values of Airborne Contaminants for 1970” of the American Conference of Governmental Industrial Hygienists, listed below:

MINERAL DUSTS	
Substance	Mppcf^(a)
<u>SILICA</u>	
Crystalline Quartz - Threshold Limited calculated from the formula ^(b)	$250^{(c)} \div (\% \text{ of SiO}_2 + 5)$
Cristobalite.	
Amorphous, including natural diatomaceous earth	20
<u>SILICATES</u> (Less than 1% crystalline silica)	
Mica	20
Portland Cement	20
Soapstone	20
Talc (non-abestiform)	20
Talc (fibrous), use asbestos limit, see 29 CFR 1926.1101	
Graphite (Natural)	15
Inert or nuisance particulates ^(d) - Note: Inert or nuisance particulates includes all mineral, inorganic, and organic dusts.	50 (or 15 mg/m ³ , whichever is the smaller) of total dust <1% SiO ₂
<p>a. Millions of particles per cubic foot of air, based on impinger samples counted by light field techniques.</p> <p>b. This standard applies to any operations or sectors for which the respirable crystalline silica standard, 1926.1153, is stayed or otherwise is not in effect.</p> <p>c. The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.</p> <p>d. Covers all organic and inorganic particulates not otherwise regulated. Same as Particulates Not Otherwise Regulated.</p>	

Below these threshold limits, no action is required; however, employees may wear dust masks for personal comfort.

Note: OSHA requires that employees who voluntarily use disposable respirators in situations where respiratory protection is not specifically required by OSHA standard (in atmospheres where exposures are below the permissible exposure limit) essentially for personal comfort or additional, though not required, respiratory protection be informed of 29 CFR 1910.134

Appendix D.

As always, engineering controls are preferred to personal protective equipment to deal with job site hazards. Therefore, local exhaust ventilation is a preferred method of maintaining atmospheres that have dust levels below the concentrations noted in the Mineral Dusts Table, above.

Local exhaust ventilation must be designed so that they prevent dispersions of dust in concentrations causing harmful exposure and that dusts are not drawn through the work area of employees.

The dust collected by an exhaust or ventilating system will be discharged to the outside atmosphere.

If concentrations are so great that a dust separator is used, the dust and refuse will be disposed of in such a manner as to not harm employees.

Of course, if the above ventilation procedures do not reduce the dust levels to acceptable limits, respirators will be used.

KirbyCo Builders
Section III
Specific Compliance Programs

Bloodborne Pathogens - Exposure Control Plan

29 CFR 1910.1030 - Bloodborne Pathogens

Note: Per CPL 2-2.69, Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens, the bloodborne pathogens standard does not apply to the construction industry. OSHA has not, however, stated that the construction industry is free from the hazards of bloodborne pathogens. Exposure to bloodborne pathogens would fall under Section 5(a)(1) of the OSH Act which states that "each employer shall furnish to each of his employees' employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

Providing first aid or other medical assistance is not the primary job assignment of the designated first aid providers of KirbyCo Builders. Any first aid rendered by them is rendered only as a collateral duty, responding solely to injuries resulting from job site incidents and only at the job site where the incident occurred.

Recordkeeping: all work-related injuries from needle-sticks and cuts, lacerations, punctures and scratches from sharp objects contaminated with another person's blood or other potentially infectious materials (OPIM) are to be recorded on the OSHA 300 as an injury.

- a. To protect the employee's privacy, the employee's name may not be entered on the OSHA 300.
- b. If the employee develops a bloodborne disease, the entry must be updated and recorded as an illness.

Note: The first aid kits that KirbyCo Builders uses do not contain sharps or needles. However, a contaminated sharp, such as a broken pair of glasses, may trigger the above.

Policy Statement

This Exposure Control Plan has been developed to eliminate or minimize the risk of exposure to bloodborne pathogens and other potentially infectious materials. This Plan presents methods and procedures to eliminate and/or minimize the hazards associated with occupational exposure to bloodborne pathogens or other infectious materials.

As a matter of policy, universal precautions will be used.

Additional components of this Plan include exposure determinations by job classification, standard operating procedures to eliminate or reduce the likelihood of disease transmission, the methods of disease transmission, definitions of terms, post exposure procedures and follow-up, training documentation, and recordkeeping.

Compliance with this Plan not only fulfills the requirements of the Occupational Safety and Health Administration, more importantly, it fulfills the desire of KirbyCo Builders to maintain a safe working environment and safeguard the health of our employees.

All affected employees should feel free to review this Plan at any time and are encouraged to consult with Chris Kirby, our Exposure Control Plan Administrator, to resolve any issues affecting its implementation. Our Plan is to be made available to the Assistant Secretary of Labor for Occupational Safety and Health or designated representative.

Definitions

All employees should know the "language" of this plan. Because some of the words and/or terms are not used in everyday life, each person must be aware of the definitions so that we are all "reading off the same page."

Below are OSHA definitions:

ASSISTANT SECRETARY: the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

BLOOD: human blood, human blood components, and products made from human blood.

BLOODBORNE PATHOGENS: pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

CLINICAL LABORATORY: a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

CONTAMINATED: the presence, or the reasonably anticipated presence, of blood or other potentially infectious materials on an item or surface.

CONTAMINATED LAUNDRY: laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

CONTAMINATED SHARPS: any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

DECONTAMINATION: the use of a physical or chemical procedure to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

DIRECTOR: the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative.

ENGINEERING CONTROLS: controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the work area.

EXPOSURE INCIDENT: a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

HAND-WASHING FACILITIES: a facility providing an adequate supply of running potable water, soap, and single use towels or hot air drying machines.

LICENSED HEALTHCARE PROFESSIONAL: a person whose legally permitted scope of practice allows him or her to independently perform the activities required by 29 CFR 1910.1030(f), Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

HBV: hepatitis B virus.

HIV: human immunodeficiency virus.

NEEDLELESS SYSTEMS: a device that does not use needles for:

- a. The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established,
- b. The administration of medication or fluids, or
- c. Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

OCCUPATIONAL EXPOSURE: reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

OTHER POTENTIALLY INFECTIOUS MATERIALS:

- a. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
- b. Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
- c. HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions, and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

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

PERSONAL PROTECTIVE EQUIPMENT: is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

PRODUCTION FACILITY: a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

REGULATED WASTE: liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

RESEARCH LABORATORY: a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

SHARPS WITH ENGINEERED SHARPS INJURY PROTECTIONS: a non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

SOURCE INDIVIDUAL: any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

STERILIZE: the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

UNIVERSAL PRECAUTIONS: is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

WORK PRACTICE CONTROLS: controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

Exposure Control Plan

This Exposure Control Plan is provided for all personnel who, as a result of the performance of their duties, would have reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials.

This Plan will be reviewed and updated annually and whenever necessary as new or modified tasks and procedures are introduced which affect occupational exposure to bloodborne pathogens or other potentially infectious materials. The review and update of this plan will:

- a. Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens.
- b. Annually document consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

First aid providers are employees responsible for direct trauma victim care, who are potentially exposed to injuries for contaminated sharps, will be asked for input on the identification, evaluation, and selection of effective engineering and work practice controls.

This Exposure Control Plan, with a copy of 29 CFR 1910.1030, Bloodborne Pathogens, will be made accessible to all employees as well as the Assistant Secretary and the Director (see definitions) who may examine and copy this plan.

Exposure Determination

Three (3) lists will be prepared and they will be maintained at the end of this exposure control plan for bloodborne pathogens & other infectious material, located **here**.

- List I:** A list of all job classifications in which all employees have occupational exposure.
- List II:** A list of job classifications in which some employees have occupational exposure.
- List III:** A list of all tasks and procedures, or groups of closely related tasks and procedures, in which occupation exposure occurs and are performed by employees in job classifications noted in List II.

Note: The above exposure determinations are to be made without regard to the use of personal protective equipment.

Methods of Compliance

Universal precautions will be used. We will treat all trauma victims' blood, bodily fluids, and other potentially infectious materials as if they are known to be infectious. Unfortunately, there is no immediate, practical way to determine if HIV, HBV, and other bloodborne pathogens are present so, to be safe, we will assume they are. Traditionally, isolation of infectious materials has been diagnosis-driven. This meant that if a person were diagnosed to have HIV or HBV infection, for example, then isolation precautions would be taken. Because the infection status of each trauma victim cannot be immediately known, it makes sense to treat all trauma victims and their body fluids as if they were infected. The precautions to take depend on the procedures being performed. For example, if one's hands will be in contact with body substances, disposable gloves will be worn. If there is risk of one's eyes being splashed with body fluids, eye protection will be worn. An impermeable barrier must be placed between yourself and the potentially infectious bodily fluids. Overkill is not necessary. Cleaning up a minor spill on a counter top does not require a mask, eye protection, and plastic apron. It does, however, require disposable gloves.

All employees will strictly adhere to the below engineering and work practice controls to eliminate or reduce the possibility of occupational exposure to bloodborne pathogens or other potentially infectious materials. Specific controls and procedures, noted below, will be used to eliminate or minimize employee exposure. If occupational exposure is:

EATING, DRINKING, SMOKING:

There shall be no eating, drinking, smoking, applying cosmetics, lip balm, or handling contact lenses in areas where there is a likelihood of occupational exposure to bloodborne pathogens or other potentially infectious materials.

Furthermore, food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, on countertops, or benches where blood or other potentially infectious materials are present.

HANDWASHING EQUIPMENT AND PROCEDURES:

Hand-washing facilities are provided which are readily accessible to all employees.

Employees will wash their hands and any other skin area exposed to blood or other potentially infectious materials with soap and water immediately or as soon as feasible:

- a. After removal of gloves or other personal protective equipment.
- b. Following contact with blood or other potentially infectious materials.

Particular attention will be given to fingernails and between fingers and rings under which infectious material may lodge. Furthermore, one should be aware that rings and jewelry are a good hiding place for bloodborne pathogens and other potentially infectious materials.

Examples of situations where hand-washing is appropriate:

- a. Before and after examining any trauma victim.
- b. After handling any soiled waste or other materials.
- c. After handling any chemicals or used equipment.

If for some reason hand-washing facilities are not functioning, appropriate antiseptic hand cleaner and clean cloth/paper towels (antiseptic towelettes) will be provided and used. If antiseptic hand cleaner and clean cloth/paper towels are used, hands will be washed with soap and water as soon as feasible.

CONTAMINATED NEEDLES & OTHER CONTAMINATED SHARPS:

Contaminated needles will not be sheared or broken.

Furthermore, all contaminated needles and other contaminated sharps shall not be bent, recapped, or removed unless:

- a. It can be demonstrated that no alternative is feasible or that it is required by a specific medical procedure.
- b. Recapping or needle removal may be accomplished through the use of a mechanical device or a one-handed method.

Contaminated **reusable** sharps will be placed in appropriate containers immediately or as soon as possible after use until properly reprocessed. These containers will:

- a. Be puncture resistant.
- b. Be leak proof on the sides and bottom.
- c. Have warning labels affixed to containers potentially infectious material and contain the following legend:



Note: The above label will be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

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

Red bags or red containers may be substituted for labels.

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

Contaminated **non-reusable** sharps will be discarded immediately or as soon as feasible and placed in containers that:

- a. Are closable
- b. Are puncture resistant
- c. Are leak proof on sides and bottom
- d. Have warning labels affixed that contain the following legend:



Note: The above label will be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

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

Red bags or red containers may be substituted for labels.

Contaminated **non-reusable** sharps shall not be stored or processed in such a manner that requires employees to reach by hand into the containers where these sharps have been placed.

During use, containers for contaminated sharps must be:

- a. Easily accessible to the employees of KirbyCo Builders.
- b. Located as close as feasible to the immediate area where sharps are used or can be reasonably anticipated to be found.
- c. Maintained upright throughout use.
- d. Replaced routinely and not be allowed to overfill.

If leakage is possible when removing a container of contaminated sharps, it shall be placed in a second container with the following container requirements:

- a. It will be closable,
- b. It will be constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping, and
- c. Colored coded red or labeled as noted above.

Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous (introduced through the skin such as a cut) injury.

OTHER REGULATED WASTE - CONTAINMENT:

The provisions that apply to contaminated sharps, above, apply to other regulated waste.

DISPOSAL OF CONTAMINATED SHARPS & OTHER REGULATED WASTE:

The actual disposal of all regulated waste shall be in compliance with applicable state laws.

SPECIMENS OF POTENTIALLY INFECTIOUS MATERIALS:

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

SPLASHING, SPRAYING OF POTENTIALLY INFECTIOUS MATERIALS:

All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and the generation of droplets of these substances.

MOUTH PIPETTING:

Mouth pipetting and mouth suction of blood or other potentially infectious materials is prohibited.

Exposure Control Plan Administrator

Chris Kirby, our designated Exposure Control Plan Administrator, will be knowledgeable in all aspects of this Plan as it relates to our operations and be available to answer questions raised by our first aid providers. Chris Kirby may call upon professionals in the Medical Arts to field questions that are of technical nature outside of their area of expertise.

Chris Kirby will:

- a. Ensure this Plan is kept current.
- b. Ensure training is provided as required.
- c. Maintain all records associated with this plan.

Designated First Aid Provider

Before one may be designated as a first aid provider, he/she must have a valid certificate in first aid training from the U.S. Bureau of Mines, the Red Cross, or equivalent training that can be verified by documentary evidence.

No person is to administer any medical assistance for which they are not appropriately trained. It is noted that the rendering of first aid is not the primary job of the designated first aid providers at KirbyCo Builders.

Personal Protective Equipment (PPE)

In spite of work practice and engineering controls, there is a requirement for appropriate personal protective equipment to provide an impermeable barrier between potentially infectious materials and the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

Employees will use appropriate personal protective equipment when there is a possibility of occupational exposure to bloodborne pathogens or other potential infectious materials.

Personal protective equipment will be provided in appropriate sizes and at no cost to the employees. Further, maintenance and replacement of personal protective equipment will be provided at no cost to the employee. Personal protective equipment will be discarded immediately if its ability to function as a barrier is compromised.

Most importantly, employees must understand that personal protective equipment is useless unless it provides an impermeable barrier between bloodborne pathogens and other potentially infectious materials and the employee's clothes, skin, eyes, mouth, or other mucous membranes.

Personal Protective Equipment is considered appropriate if it prevents potentially infectious materials from reaching work/street clothing or body surface when used under normal conditions.

DISPOSABLE GLOVES:

Disposable, single use gloves, such as surgical or examination gloves will be worn when it can be reasonably anticipated that the employee may have hand contact with blood or other potentially infectious materials and when handling or touching contaminated items or surfaces. Disposable gloves will always be used when there is a possibility of contact with bloodborne pathogens or other potentially infectious materials.

Disposable gloves shall never be washed, decontaminated, or reused.

Disposable gloves shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or their ability to function as a barrier is compromised.

Should any employee be allergic to the normal gloves provided, an appropriate alternative (such as hypoallergenic and/or powderless gloves) will be provided in the proper size at no cost to the employee.

UTILITY GLOVES:

Utility gloves may be used for general cleanup (not for any trauma victim procedure) when there is anticipated exposure to bloodborne pathogens or other potentially infectious materials. Utility gloves may be decontaminated for re-use if the integrity of the gloves is not compromised. They will be discarded if they are cracked, peeling, torn, punctured, or exhibit signs of deterioration or when their ability to function as a barrier is compromised.

EYE AND RESPIRATORY PROTECTION:

Eye (goggles, glasses, face shield, etc.) and respiratory (mask, etc.) protection will be used when it can reasonably be expected that bloodborne pathogens or other potentially infectious materials may splash or spray in or around the eyes, nose, mouth, and general head area of the employee.

PROTECTIVE BODY CLOTHING:

Protective body clothing such as gowns, aprons, lab coats, etc. will be worn as determined by the professional judgment of the employee in relation to task. The protective body clothing will certainly be worn where there can reasonably be expected exposure to bloodborne pathogens or other potentially infectious materials to the body area.

LAUNDRY:

Personal protective equipment will be cleaned, laundered, and disposed of at no cost to the employee.

Note: In rare and extraordinary circumstances, an employee, in her/his professional judgment, may decline to temporarily and briefly wear personal protective equipment if he/she deems that the equipment would prevent the delivery of health care or would have increased the hazard of occupational exposure to the employee or his/her co-workers. Should this event occur, it will be documented, investigated, and procedures will be developed to prevent a reoccurrence.

Housekeeping

Housekeeping is an ongoing, never ending, procedure which not only enhances the work environment of KirbyCo Builders but also eliminates health risk to our personnel. In the area of bloodborne pathogens and other hazardous materials, to ensure proper cleaning, decontamination, sterilization, and disinfecting of surfaces within our work area, cleaning will be accomplished only by employees who have received training in universal precautions and the provisions of this plan. The documented Housekeeping Schedule & Checklist is found at the end of this exposure control plan for bloodborne pathogens & other infectious material. This Schedule will be adhered to following an incident that results in the potential exposure to bloodborne pathogens or other potentially infectious materials.

Broken, potentially infected glassware should be picked up and disposed of using mechanical means such as a brush and dust pan or forceps.

All sharps will be stored in a manner that allows easy access and safe handling.

Infectious waste will be placed in containers that are color coded red. These containers will be decontaminated as soon as practical.

Subsequent to rendering any procedures, employees will ensure that all surfaces on which blood, body fluids, bloodborne pathogens, or other infectious materials may be present are cleaned with an appropriate disinfectant.

Hepatitis B Epidemiology

Hepatitis B (serum hepatitis) routes of infection include parenteral, oral, or direct contact. The virus can also spread by contact with the respiratory tract. Its sources include contaminated needles and surgical instruments as well as contaminated blood products. Hepatitis B virus has also been found in urine. Further, the hepatitis B virus can live for up to seven (7) days on a dry surface and can be easily be transmitted by a single needle stick. Its incubation period is quite lengthy, generally between 45 and 180 days. It affects all age groups. Recovery from hepatitis B does provide immunity. Generally, one can expect a complete recovery from viral hepatitis; however, it is potentially fatal depending on many factors including the virulence (aggressiveness) of the virus, prior hepatic damage, and natural barriers to damage and disease of the liver. It is possible for viral hepatitis to lead to fulminating viral hepatitis and sub-acute fatal viral hepatitis both of which are fatal. Onset symptoms may include headache, elevated temperature, chills, nausea, dyspepsia, anorexia, general malaise, and tenderness over the liver. These types of symptoms will last about one (1) week, and then subside, and jaundice will occur. Jaundice is caused by damaged liver cells. The convalescent stage begins with the disappearance of the jaundice and may last several months. Recovery is expected in six (6) months.

Risk of Exposure

Per the Department of Human Services of the Center for Disease Control, below is the risk of infection after occupational exposure:

HBV:

First aid providers who have received hepatitis B vaccine and have developed immunity to the virus are at virtually no risk for infection. For an unvaccinated person, the risk from a single needle-stick or cut exposure to HBV-infected blood ranges from 6-30% and depends on the hepatitis B e antigen (HBeAg) status of the source individual. Individuals who are both hepatitis B surface antigen (HBsAG) positive and HBeAg positive have more virus in their blood and are more likely to transmit HBV.

HCV:

Based on limited studies, the risk for infection after a needle-stick or cut exposure to HCV-infected blood is approximately 1.8%. The risk following a blood splash is unknown, but is believed to be very small; however, HCV infection from such an exposure has been reported.

HIV:

The average risk of HIV infection after a needle stick or cut exposure to HIV-infected blood is 0.3% (i.e., three-tenths of one percent, or about 1 in 300). Stated another way, 99.7% of needle-stick/cut exposures do not lead to infection.

The risk after exposure of the eye, nose, or mouth to HIV-infected blood is estimated to be, on average, 0.1% (1 in 1,000).

The risk after exposure of the skin to HIV-infected blood is estimated to be less than 0.1%. A small amount of blood on intact skin probably poses no risk at all. There have been no documented cases of HIV transmission due to an exposure involving a small amount of blood on intact skin (a few drops of blood on skin for a short period of time). The risk may be higher if the skin is damaged (for example, by a recent cut) or the contact involves a large area of skin or is prolonged (for example, being covered in blood for hours).

All employees with occupational exposure are encouraged to accept the hepatitis B vaccination.

Hepatitis B Vaccination

The hepatitis B vaccination series will be provided, at no cost, to all unvaccinated first aid providers as soon as possible (within 24 hours of initial exposure). All exposed first aid provider employees are encouraged to take this vaccination series unless they have previously received the complete hepatitis B vaccination series; antibody testing has revealed that the employee is immune; or the vaccine is contraindicated (not recommended) for medical reasons. Post-exposure evaluation, prophylaxis (prevention of or protection from disease), and follow-up will be provided at no cost to the employee.

The Hepatitis B vaccination will be performed under the supervision of a licensed physician or other licensed healthcare professional.

All laboratory tests will be conducted by an accredited laboratory at no cost to the employee.

Should routine booster dose(s) of hepatitis B vaccine (as recommended by the U.S. Public Health Service at a future date) be required, they will be provided at no cost as long as the employee remains a first aid provider.

An employee may decline the Hepatitis B vaccination and this declination shall not reflect unfavorably upon him/her; however, this declination must be in writing. See the Hepatitis B Declination Form.

It is important to note that if a first aid provider initially declines the hepatitis B vaccination series, he/she may decide at a later date to accept the vaccination series and it will be provided at no cost assuming he/she is still occupationally exposed to bloodborne pathogens or other potentially infectious materials.

Sharps Injury Log

A Sharps injury log will be maintained for the recording of percutaneous injuries from contaminated sharps.

The information on the log will be recorded and maintained in such manner as to protect the confidentiality of the injured employee.

The sharps injury log will contain:

- a. The type and brand of device involved in the incident.
- b. The department or work area where the exposure incident occurred.
- c. An explanation of how the incident occurred.

The sharps injury log shall be maintained for the period of five years.

First Aid Provider Input

As a matter of policy, all first aid providers who are responsible for first aid delivery as an additional job are encouraged to suggest methods to improve the engineering and job site controls for KirbyCo Builders. This input may be made verbally to Chris Kirby at any time. Additionally, during the annual refresher training, suggestions will be solicited.

Plan Review

This plan will be reviewed, and if necessary, updated annually to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. As new medical devices are developed which reduce employee exposure, they will be introduced into our practice. A review of the "Sharps Log" will help identify problem areas and/or ineffective devices which may need replacement.

Post-Exposure Evaluation and Follow-Up

The information that has preceded *Post-Exposure Evaluation and Follow-up* has dealt with the methods to restrict occupational exposure to bloodborne pathogens and other infectious materials. Post-exposure evaluation and follow-up deals with the steps to take immediately following a potential exposure incident and the steps that will be taken over time to protect the employees of KirbyCo Builders from further health risk.

All incidents involving exposure to blood or other potentially infectious materials will be reported to Chris Kirby, in writing, before the end of the shift in which the incident occurred using the Exposure Incident Report, located at the end of this exposure control plan for bloodborne pathogens & other infectious material. This Report will be prepared regardless of whether or not there has been an "Exposure Incident" as defined in this Plan and in 29 CFR 1910.1030. A separate Exposure Incident Report will be completed for each employee who was occupationally exposed.

Information in this Report will include:

- a. The date and time the incident occurred.
- b. A brief description of the events leading up to the exposure (what happened).
- c. The name of the individual exposed.
- d. The route of exposure.
- e. "Source individual" and "exposed individual" information, including the acceptance or rejection of hepatitis B vaccination series.
- f. A determination of whether or not an actual "exposure incident" occurred. Refer to Definitions in this Plan or 29 CFR 1910.1030.

Chris Kirby, or his authorized representative, will review the Exposure Incident Report and determine if methods or procedures may be altered to prevent a reoccurrence of the incident.

Further, an occupational bloodborne pathogens exposure incident which results in the recommendation for hepatitis B vaccination would be recorded on OSHA Form 300 as an injury. See Recordkeeping.

All unvaccinated employees who have assisted in any situation involving blood will be afforded the opportunity to receive the hepatitis B vaccination series as soon as possible but not later than twenty-four (24) hours after the situation.

A confidential medical evaluation and follow-up will be provided immediately, at no cost, to the employee. The healthcare professional evaluating an employee after an exposure incident will be provided a copy of 29 CFR 1910.1030.

Further, the healthcare professional will be provided a description of the exposed employee's duties as they relate to the exposure incident; documentation of the route(s) of exposure; the circumstances under which the exposure occurred; the results of the source individual's blood testing, if available; and all medical records relevant to the appropriate treatment of the employee including vaccination status which is maintained in our office. See Recordkeeping.

The confidential medical evaluation and follow-up will include:

- a. Documentation of the route(s) of exposure.
- b. The circumstances under which the exposure incident occurred.
- c. The identification and documentation of the source individual, unless it can be established that the identification is not feasible or prohibited by state or local law.
- d. The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

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

- e. The source individual's blood shall be tested as soon as feasible to determine HBV and HIV infectivity unless it is already known, in which case this procedure is not necessary.

If consent to test the source individual's blood cannot be obtained the following will occur:

- a. It will be established and documented that legally required consent cannot be obtained.
- b. When the source individual's consent is not required by law, the source individual's blood shall be tested and the results documented.

The results of the source individual's testing shall be made available to the exposed employee and the employee shall be informed of applicable laws and the identity and infectious status of the source individual.

The employee shall be provided post-exposure prophylaxis, when medically indicated, and counseling.

The employee will be provided with a copy of the healthcare professional's written opinion within 15 days of the completion of the evaluation. The written opinion shall be limited to:

- a. Whether Hepatitis B vaccination is indicated and if the employee has received such vaccination.
- b. An indication that the employee has been informed of the results of the evaluation.
- c. An indication that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

All other findings or diagnoses will remain confidential and will not be included in the written report.

Recordkeeping

Complete and accurate medical records will be maintained for each employee with occupational exposure. These records shall remain confidential and will not be disclosed or reported, without the employee's express written consent, to any person within or outside the job site, except as required by law.

Medical records will be maintained for at least the duration of employment plus 30 years.

Included in the employee's medical record will be:

- a. The employee's name and social security number.
- b. A copy of the employee's hepatitis B vaccination status including the date of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination.

Note: If the employee has declined to receive the hepatitis B vaccination series when appropriate, this declination will be included in the person's medical records.

- c. A copy of all results of examinations, medical testing, and follow-up procedures as required following an exposure incident.
- d. The employer's copy of the healthcare professional's written opinion following an exposure incident.
- e. A copy of all information provided to the healthcare professional following an exposure incident.

All work-related injuries from needle-sticks and cuts, lacerations, punctures and scratches from sharp objects contaminated with another person's blood or other potentially infectious materials are to be recorded on the OSHA 300 as an injury.

- a. To protect the employee's privacy, the employee's name may not be entered on the OSHA 300.
- b. If the employee develops a bloodborne disease, the entry must be updated and recorded as an illness.

Training

All of the first aid providers at KirbyCo Builders must have current certificates of first aid and CPR training on file. These records will be maintained by Chris Kirby.

Initial training, training at the introduction of a new or altered task affecting exposure to bloodborne pathogens or other potentially hazardous materials, and annual training will be provided by a person knowledgeable in the subject matter contained in this Plan.

Training will be interactive between the instructor and employee. An opportunity to ask questions will be provided. Further, this Plan as well as 29 CFR 1910.1030, Bloodborne Pathogens, will be readily available for review.

All training will be documented and will be maintained for a period of three (3) years from the date on which the training occurred.

Training will include, but not be limited to, the following topics and materials:

- a. A complete review of our Exposure Control Plan and its accessibility.
- b. An accessible copy of 29 CFR 1910.1030 and an explanation of its contents.
- c. A general explanation of the epidemiology and symptoms of bloodborne diseases.
- d. An explanation of the modes of transmission of bloodborne pathogens.
- e. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- f. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment.
- g. Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
- h. An explanation of the basis for selections of personal protective equipment.

- i. Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
- j. Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- k. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- l. Information on the post-exposure evaluation and follow-up that is provided after an exposure incident.
- m. An explanation of the color coding required by 29 CFR 1910.1030(g)(1).
- n. A request for input from employees in the identification, evaluation, and selection of effective engineering and work practice controls.

Waste Management

Waste management, if necessary, will comply with State EPA standards regarding handling, storage, and shipping of medical wastes.

Summary

The whole thrust of the exposure control plan for bloodborne pathogens & other infectious material Plan is to provide an awareness of the dangers of bloodborne pathogens, provide a means of reducing the possibility of occupational exposure, and, should occupational exposure occur, provide a means of reducing health risk.

KirbyCo Builders

Exposure Determination Form - List I

All job classifications in which all employees have occupational exposure.

1. First Aid Providers
2. _____
3. _____
4. _____
5. _____
6. _____

Note: The above exposure determinations are to be made without regard to the use of personal protective equipment.

Note: The primary job assignment of the designated first aid providers at KirbyCo Builders is not the rendering of first aid or other medical assistance. Any first aid rendered by them is rendered only as a collateral duty, responding solely to injuries resulting from job site incidents and only at the location where the incident occurred.

KirbyCo Builders

Exposure Determination Form - List II

Job classifications in which some employees have occupational exposure:

1. None
2. _____
3. _____
4. _____
5. _____
6. _____

Note: The above exposure determinations are to be made without regard to the use of personal protective equipment.

Note: The primary job assignment of the designated first aid providers at KirbyCo Builders is not the rendering of first aid or other medical assistance. Any first aid rendered by them is rendered only as a collateral duty, responding solely to injuries resulting from job site incidents and only at the location where the incident occurred.

KirbyCo Builders

Exposure Determination Form - List III

All tasks and procedures or groups of closely related tasks and procedures in which occupation exposure occurs and are performed by employees in job classifications noted in List II.

<u>Job Classification</u>	<u>Tasks</u>
1. <u>None</u>	<hr/> <hr/> <hr/> <hr/>
2. <u></u>	<hr/> <hr/> <hr/> <hr/>
3. <u></u>	<hr/> <hr/> <hr/> <hr/>
4. <u></u>	<hr/> <hr/> <hr/> <hr/>

Note: The above exposure determinations are to be made without regard to the use of personal protective equipment.

Note: The primary job assignment of the designated first aid providers at KirbyCo Builders is not the rendering of first aid or other medical assistance. Any first aid rendered by them is rendered only as a collateral duty, responding solely to injuries resulting from job site incidents and only at the location where the incident occurred.

KirbyCo Builders

Housekeeping Schedule & Checklist

SCHEDULE

Following every incident where there is a possibility of the presence of residual bloodborne pathogens or other potentially infectious materials.

CHECKLIST

Only personnel who have had training in our Exposure Control will ensure that all surfaces are decontaminated and that cleaning materials are properly disposed of. Areas to consider include, but are not limited to:

	YES	NA
FLOORS	<input type="checkbox"/>	<input type="checkbox"/>
WALLS	<input type="checkbox"/>	<input type="checkbox"/>
EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>
PRODUCT	<input type="checkbox"/>	<input type="checkbox"/>
WASTE CONTAINERS	<input type="checkbox"/>	<input type="checkbox"/>
TOOLS	<input type="checkbox"/>	<input type="checkbox"/>

Broken, potentially infected glassware should be picked up and disposed of using mechanical means such as a brush and dust pan or forceps.

All sharps will be stored in a manner that allows easy access and safe handling.

Infectious waste will be placed in containers that are color coded red. These containers will be decontaminated as soon as practical.

Subsequent to rendering any procedures, employees will ensure that all surfaces on which blood, body fluids, bloodborne pathogens, or other infectious materials may be present are cleaned with an appropriate disinfectant.

KirbyCo Builders

Hepatitis B Declination Form

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis V vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

(WITNESS)

(EMPLOYEES SIGNATURE)

(PRINTED NAME)

(DATE)

KirbyCo Builders

Sharps Injury Log

Note: A sharps injury log will be maintained for the recording of percutaneous injuries from contaminated sharps.

The information on the log will be recorded and maintained in such manner as to protect the confidentiality of the injured employee.

This sharps injury log shall be maintained for the period of five years.

_____	_____
(Incident Date)	(Employee SSN)

Type and brand of device involved in the incident:

Work area where the exposure incident occurred:

Explanation of how the incident occurred:

Chris Kirby

Safety Program Administrator

KirbyCo Builders

Annual Exposure Control Plan Review

This Exposure Control Plan was prepared:

At least annually, this program will be reviewed and, if necessary, updated to reflect innovations in procedures and technological developments that eliminates or reduces exposure to bloodborne pathogens.

As part of the annual review, the below will be considered:

- a. Employee Input
- b. Sharps Injury Log
- c. Exposure Incident Reports
- d. Professional Journals

<u>Date Reviewed:</u>	<u>Signature</u>	<u>Title</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

KirbyCo Builders

Exposure Incident Report

ALL INFORMATION ON THIS FORM IS TO REMAIN CONFIDENTIAL

THIS FORM SHALL BE COMPLETED AS SOON AS FEASIBLE AFTER AN EXPOSURE INCIDENT BUT, UNDER NO CIRCUMSTANCES, AFTER THE SHIFT ON WHICH THE INCIDENT OCCURRED.

DATE: _____ TIME: _____

NAME OF EMPLOYEE: _____

ROUTE OF EXPOSURE: _____

SOURCE INDIVIDUAL'S NAME: _____

a. Above individual did / did not consent to be tested for HBV or HIV.

b. Testing was done by: _____

Results: _____

EMPLOYEE WAS OFFERED AND ACCEPTED: **NO YES**

a. Hepatitis Vaccination Series. [Date(s)] ☐ ☐ _____

1. If "NO", written declination was signed.

b. Post Exposure Evaluation and follow-up. ☐ ☐

c. Employee consents to baseline blood collection. ☐ ☐ _____
(Signature)

Description of events leading to this exposure incident:

Corrective Measures to Prevent a Reoccurrence:

Chris Kirby

Employee Signature

Cranes and Derricks in Construction

29 CFR 1926 Subpart CC - Cranes and Derricks in Construction

1926 Subpart CC - Cranes and Derricks in Construction, applies to power-operated cranes and derricks, and their attachments, that can hoist, lower and horizontally move a suspended load.

Exclusions to this standard include, but are not limited to:

- a. Power-operated cranes and derricks that have been converted or adapted for a non-hoisting/lifting use.
- b. Power shovels, excavators, wheel loaders, backhoes, loader backhoes, track loaders.
- c. Machinery originally designed as vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms.
- d. Powered industrial trucks (forklifts), except when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load.
- e. Articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.
- f. Articulating/knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. Such sheet goods or packaged materials include, but are not limited to: sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.

Note: The above articulating/knuckle-boom crane exclusion does not apply when it is used to 1) hold, support or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure; 2) when the material being handled is a prefabricated component such as precast concrete members or panels, roof trusses, prefabricated building sections such as, but not limited to: floor panels, wall panels, roof panels, roof structures, or similar items; and, 3) when the material being handled by the crane is a structural steel member (for example, steel joists, beams, columns, steel decking (bundled or unbundled) or a component of a systems-engineered metal building.

Actions Required Prior to Assembly

Prior to assembly of a crane, care must be taken to ensure ground conditions are appropriate for the crane and other hazards, specifically, electrical hazards, are eliminated.

Ground Conditions:

Note: Ground conditions means the ability of the ground to support the crane or derrick (including slope, compaction, and firmness).

The controlling entity must ensure that the crane is not assembled **or used** unless the ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the manufacturer's specifications for adequate support and degree of level are met.

Note: The requirement for the ground to be drained does not apply to marshes/wetlands.

The controlling entity must inform the user of the crane and the operator of the location of hazards beneath the set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.

Note If there is no controlling entity for the project, the requirements above must be met by the employer that has authority at the site to make or arrange for ground preparations for crane operations.

If the Assembly/Disassembly director **or the operator** determines that ground conditions do not meet the above requirements, that person's employer **must** have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the above requirements are met.

Electrical Hazards:

We will assume that all power lines are energized unless the power line operator confirms that the power line has been, and continues to be, deenergized and visibly grounded at the worksite.

When working near transmitter/communication towers where the crane is close enough for an electrical charge to be induced in the crane or materials being handled, the transmitter must be deenergized or the following precautions must be taken:

- a. The crane must be provided with an electrical ground.
- b. If we must use a tag line, it must be nonconductive.

Note: The following are requirements for all power lines voltages, except when the "20 feet" distance is referenced. For power lines that range from 351 kV up to 1000 kV, the distance "20 feet" must be substituted with 50 feet. For power lines over 1000 kV, the minimum clearance distance must be established by the power line operator or a registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

We must determine if any part of the crane, load line, or the load including the rigging and lifting accessories could get closer than 20 feet to a power line during the assembly/disassembly process. If it is possible we will choose one of the requirements of Option 1, Option 2, or Option 3.

Option 1: De-energize and ground the power lines. We must confirm with the power line operator that the power lines have been de-energized and visibly grounded at the worksite.

Option 2: 20-foot clearance. Ensure that no part of the crane, load line, or the load including rigging and lifting accessories, can get closer than 20 feet to the power lines.

Option 3: Use Table A - Minimum Clearance Distances. We have to determine the line's voltage and the minimum approach distance permitted under Table A.

Note: When Option 3 is used, the power line operator must provide the requested voltage information within two working days of the employer's request.

Table A - Minimum Clearance Distances	
Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).
Note: The value that follows “to” is up to and includes that value. For example, over 50 to 200 means up to and including 200 kV.	

When we use Option 2 or Option 3, we must use the following procedures to prevent any part of the crane or load from becoming too close to the live power lines.

We will conduct a planning meeting with the Assembly/Disassembly director, crane operator, assembly/disassembly crew, and the other workers who will be in the assembly/disassembly area, to review the location of the power lines and the steps that will be implemented to prevent encroachment/electrocution, including the use of nonconductive tag lines when needed.

We will select at least one measure from this list that will be effective in preventing encroachment. The measures are as follows:

- a. Use a dedicated spotter who is in continuous contact with the crane operator.
- b. Use a proximity alarm that is set to give the crane operator sufficient warning to prevent encroachment.
- c. Use a device that automatically warns the crane operator when to stop movement, such as a range control warning device. The device will be set to give the crane operator sufficient warning to prevent encroachment.
- d. Use a device that automatically limits range of movement and have it set to prevent encroachment.
- e. Use an elevated warning line, barricade, or line of signs that are in view of the crane operator and that are equipped with flags or similar high-visibility markings.

It is prohibited for any part of a crane, load line, or the load including the rigging and lifting accessories, whether partially or fully assembled, to be under a power line, or be closer than the minimum approach distance under Table A to a power line. The only exception to this is if we have confirmed that the power line operator has deenergized and visibly grounded the power line at the job site.

We will also post at least one electrocution hazard warning conspicuously in the cab so that it is in view of the crane operator. Additionally, at least two signs will be posted on the outside of the crane, except for overhead gantry and tower cranes.

Dedicated Spotter Requirements

When a dedicated spotter is used, they must:

- a. Be equipped with a visual aid to assist in identifying the minimum clearance distance.
Note: Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).
- b. Be positioned to effectively gauge the clearance distance.
- c. When necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.
- d. Give timely information to the operator so that the required clearance distance can be maintained.

Assembly/Disassembly

When assembling or disassembling a crane and/or its attachments, the Assembly/Disassembly director must comply with all applicable manufacturer prohibitions and will select to use the manufacturer's procedures applicable to the crane and/or attachments.

Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("Assembly/ Disassembly director").

Where the assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person. This person will be considered the Assembly/Disassembly director.

The Assembly/Disassembly director must understand the applicable assembly/disassembly procedures.

The Assembly/Disassembly director must review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly, unless they understand the procedures and have applied them to the same type and configuration of crane, including possible accessories.

Before commencing assembly/disassembly operations, the Assembly/Disassembly director must ensure that the crew members understand all of the following:

- a. Their tasks.
- b. The hazards associated with their tasks.
- c. The hazardous positions/locations that they need to avoid.

Note: If a crew member takes on a different task during assembly/disassembly operations, or if new personnel is added during the assembly/disassembly operations, the Assembly/Disassembly director must complete the above three steps.

Before a crew member goes to a location where they could be injured by movement and that is out of view of the operator, the crew member must inform the crane operator that he/she is going to that location.

Where the operator knows that a crew member went to a location noted above, the operator must not move any part of the crane or load until the operator is informed in accordance with a prearranged system of communication that the crew member is in a safe position.

When pins (or similar devices) are being removed, employees must not be under the boom, jib, or other components, except where Addressable/Disassembly director demonstrates that site constraints require one or more employees to be under the boom, jib, or other components when pins (or similar devices) are being removed. The Assembly/Disassembly director must implement procedures that minimize the risk of unintended dangerous movement and minimize the duration and extent of exposure under the boom.

During all phases of assembly/disassembly the rated capacity limits for loads imposed on the crane, crane components, the rigging, lifting lugs, and accessories must not be exceeded for the crane being assembled/disassembled.

The Assembly/Disassembly director supervising the assembly/disassembly operation must address the hazards associated with the operation, which include:

- a. Site and ground conditions must be adequate for safe assembly/disassembly operations and to support the crane during assembly/disassembly.
- b. The size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability.

- c. When used to support lattice booms or components, blocking must be appropriately placed to:
 - 1. Protect the structural integrity of the crane, and
 - 2. Prevent dangerous movement or collapse.
- d. When using an assist crane, the loads that will be imposed on the assist crane at each phase of assembly/disassembly must be verified in accordance with 29 CFR 1926.1417(o)(3) before assembly/disassembly begins.
- e. The point(s) of attachment of rigging to a boom (or boom sections or jib or jib sections) must be suitable for preventing structural damage and facilitating safe handling of these components.
- f. The center of gravity of the load must be identified if that is necessary for the method used for maintaining stability.

Note: Where there is insufficient information to accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity must be used.
- g. The boom sections, boom suspension systems (such as gantry A-frames and jib struts), and components must be rigged or supported to maintain stability upon the removal of the pins.
- h. Suspension ropes and pendants must not be allowed to catch on the boom or jib connection pins or cotter pins (including keepers and locking pins).
- i. The potential for unintended movement from inadequately supported counterweights and from hoisting counterweights.
- j. Each time reliance is to be placed on the boom hoist brake to prevent boom movement during assembly/disassembly, the brake must be tested prior to such reliance to determine if it is sufficient to prevent boom movement. If it is not sufficient, a boom hoist pawl, other locking device/back-up braking device, or another method of preventing dangerous movement of the boom (such as blocking or using an assist crane) from a boom hoist brake failure must be used.
- k. Backward stability before swinging the upper works, travel, and when attaching or removing crane components.
- l. The effect of wind speed and weather on the crane.

Additionally, the following must be addressed, if applicable:

- a. Manufacturer limitations on the maximum amount of boom supported only by cantilevering must not be exceeded. Where these are unavailable, a registered professional engineer familiar with the type of crane involved must determine in writing this limitation, which must not be exceeded.
- b. The weight of each of the components must be readily available.
- c. The selection of components, and configuration of the equipment, that affect the capacity or safe operation of the crane must be in accordance with manufacturer instructions, prohibitions, limitations, and specifications.
 1. Where these are unavailable, a registered professional engineer familiar with the type of crane involved must approve, in writing, the selection and configuration of components; or
 2. Approved modifications that meet the requirements of 29 CFR 1926.1434 - Equipment Modifications.
- d. Upon completion of assembly, the crane must be inspected to ensure compliance with the above.

Post-assembly

Upon completion of assembly, the crane must be inspected by a qualified person to assure that it is configured in accordance with manufacturer criteria.

Where manufacturer criteria are unavailable, a qualified person must:

- a. Determine if a registered professional engineer (RPE) who is familiar with the type of crane involved is needed to develop criteria for the configuration. If an RPE is not needed, we will ensure that the criteria are developed by the qualified person. If an RPE is needed, we will ensure that they are developed by an RPE.
- b. Determine if the crane meets the criteria developed in accordance with paragraph a. above.

The crane must not be used until an inspection demonstrates that it is configured in accordance with the applicable criteria.

Note: Reusable shipping pins, straps, links, and similar equipment must be removed. Once they are removed they must either be stowed or otherwise stored so that they do not present a falling object hazard.

Rigging

In addition to following the requirements in 29 CFR 1926.251 and other requirements in this and other standards applicable to rigging, when rigging is used for assembly/disassembly, the employer must ensure that:

- a. The rigging work is done by a qualified rigger.
- b. Synthetic slings are protected from: abrasive, sharp or acute edges, and configurations that could cause a reduction of the sling's rated capacity, such as distortion or localized compression.

Note: Requirements for the protection of wire rope slings are contained in 29 CFR 1926.251(c)(9).

- c. When synthetic slings are used, the synthetic sling manufacturer's instructions, limitations, specifications and recommendations must be followed.

Inspections

Any part of a manufacturer's procedures regarding inspections that relate to safe operation (such as to a safety device or operational aid, critical part of a control system power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) that is more comprehensive or has a more frequent schedule of inspection than the requirements of 29 CFR 1926.1412 must be followed.

All inspection documents must be available, during the applicable document retention period, to all persons who conduct inspections.

Modified Equipment Inspection:

Equipment that has had modifications or additions which affect the safe operation of the crane (such as modifications or additions involving a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) or capacity must be inspected by a **qualified person** after such modifications/additions have been completed, prior to initial use. The inspection must meet all the requirements of 29 CFR 1926.1412(a).

Repaired/adjusted Equipment Inspection:

Equipment that has had a repair or adjustment that relates to safe operation (such as: a repair or adjustment to a safety device or operator aid, or to a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism), must be inspected by a **qualified person** after such a repair or adjustment has been completed, prior to initial use. The inspection must meet all the requirements of 29 CFR 1926.1412(b).

Equipment Not in Regular Use Inspection:

Equipment that has been idle for 3 months or more must be inspected by a qualified person in accordance with the requirements of the Monthly Inspection, below.

Post-assembly Inspection:

Upon completion of assembly, the crane must be inspected by a **qualified** person to assure that it is configured in accordance with the criteria as described previously. The inspection must meet all the requirements of 29 CFR 1926.1412(c).

Each Shift Inspection:

A **competent person** must begin a visual inspection prior to each shift the crane will be used, which must be completed before or during that shift. The inspection must consist of observation for apparent deficiencies. Taking apart components and booming down is not required as part of this inspection unless the results of the visual inspection or trial operation indicate that further investigation necessitating taking apart components or booming down is needed. Determinations made in conducting the inspection must be reassessed in light of observations made during operation. Some of the items include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions.

The inspection must meet all the requirements of 29 CFR 1926.1412(d).

Daily (each shift) inspections will be documented and include the following: items checked, results of the inspection, and name and signature of the inspector. Documentation of daily (each shift) inspections will be retained for 3 months.

Monthly Inspection:

Per 29 CFR 1926.1412(e), each month the crane is in service it must be inspected by **competent person**. The inspection must meet all the requirements of 29 CFR 1926.1412(d). See “Each Shift” inspection, above.

Note: Documented monthly inspection is not required if the daily (each shift) inspection is documented and records are retained for 3 months.

Annual/Comprehensive Inspection:

At least every 12 months the crane must be inspected by a qualified person in accordance with 29 CFR 1926.1412(d) except that the corrective action set forth in paragraphs (f)(4), (f)(5), and (f)(6) of 29 CFR 1926.1412 must apply in place of the corrective action required by paragraphs (d)(2) and (d)(3) of 29 CFR 1926.1412.

In addition, at least every 12 months, the crane must be inspected by a qualified person. Disassembly is required, as necessary, to complete the inspection. The inspection must meet all the requirements of 29 CFR 1926.1412(f).

Documentation of Annual/Comprehensive Inspection:

The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection:

- a. The items checked and the results of the inspection.
- b. The name and signature of the person who conducted the inspection and the date.

Severe Service Inspection:

Where the severity of use/conditions is such that there is a reasonable probability of damage or excessive wear (such as loading that may have exceeded rated capacity, shock loading that may have exceeded rated capacity, prolonged exposure to a corrosive atmosphere), the crane will stop being used and a **qualified** person must inspect it. The inspection must meet all the requirements of 1926.1412(g).

Wire Rope Inspection

Wire Rope Shift Inspection:

A competent person must begin a visual inspection prior to each shift the crane is used, which must be completed before or during that shift. The inspection must consist of observation of wire ropes (running and standing) that are likely to be in use during the shift for apparent deficiencies, including those listed in 29 CFR 1926.1413(a)(2). Untwisting (opening) of wire rope or booming down is not required as part of this inspection.

Daily (each shift) inspections will be documented and include the following: items checked, results of the inspection, and name and signature of the inspector. Documentation of daily (each shift) inspections will be retained for 3 months.

Wire Rope Monthly Inspection:

Each month an inspection must be conducted in accordance shift inspection, above, and 29 CFR 1926.1413(b).

Note: Documented monthly inspection is not required if the daily (each shift) inspection is documented and records are retained for 3 months.

Wire Rope Annual/Comprehensive Inspection:

At least every 12 months, wire ropes in use on cranes must be inspected by a qualified person in accordance with shift inspection, above, and 29 CFR 1926.1413(c).

In addition, at least every 12 months, the wire ropes in use on cranes must be inspected by a qualified person in accordance with 29 CFR 1926.1413(c)

Documentation of Annual/Comprehensive Wire Rope Inspection:

The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection:

- a. The items checked and the results of the inspection.
- b. The name and signature of the person who conducted the inspection and the date.

Safety Devices

Operations must not begin unless all of the devices listed below are in proper working order. If a device stops working properly during operations, the operator must safely stop operations. If any of the devices are not in proper working order, the crane must be taken out of service and operations must not resume until the device is again working properly.

- a. Crane level indicator.

Note: This requirement does not apply to portal cranes, derricks, floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation.

- b. Boom stops, except for derricks and hydraulic booms.
- c. Jib stops (if a jib is attached), except for derricks.
- d. Cranes with foot pedal brakes must have locks.
- e. Hydraulic outrigger jacks and hydraulic stabilizer jacks must have an integral holding device/check valve.
- f. Cranes on rails must have rail clamps and rail stops, except for portal cranes.
- g. Horn

Crane Operations

Operators must comply with all manufacturer procedures applicable to the operational functions of the crane, including its use with attachments.

Operators must have access to procedures applicable to the operation of the crane and these items must be readily available in the cab at all times for use by the operator. These items include: rated capacities (load charts), recommended operating speeds, special hazard warnings instructions, and operator's manual.

Note: Where rated capacities are available in the cab only in electronic form: in the event of a failure which makes the rated capacities inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until the rated capacities (in electronic or other form) are available.

The operator must not engage in any practice or activity that diverts his/her attention while actually engaged in operating the crane, such as the use of cellular phones (other than when used for signal communications).

The operator has the authority **and responsibility** to stop and refuse to handle loads whenever there is a safety concern. A qualified person, at this point, must determine that safety has been assured.

Power Line Safety

We will assume that all power lines are energized unless the power line operator confirms that the power line has been, and continues to be, deenergized and visibly grounded at the worksite.

When working near transmitter/communication towers where the crane is close enough for an electrical charge to be induced in the crane or materials being handled, the transmitter must be deenergized or the following precautions must be taken:

- a. The crane must be provided with an electrical ground.
- b. If we must use a tag line, it must be nonconductive.

Note: The following are requirements for all power lines voltages, except when the "20 feet" distance is referenced. For power lines that range from 351 kV up to 1000 kV, the distance "20 feet" must be substituted with 50 feet. For power lines over 1000 kV, the minimum clearance distance must be established by the power line operator or a registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

Hazard Assessment and Precautions:

Before beginning crane operations, we must

- a. Identify the work zone by either:
 1. Demarcating boundaries with flags or a range limit device and prohibit the operator from operating the crane past those boundaries, or
 2. Define the work zone as the area 360 degrees around the crane, up to the maximum working radius.
- b. Determine if any part of the crane, load line, or the load including rigging and lifting accessories could get closer than 20 feet to a power line if operated at the maximum working radius in the work zone. If so, the requirements of Option 1, Option 2, or Option 3 must be met.

Option 1: De-energize and ground the power lines. We must confirm with the power line operator that the power line has been de-energized and visibly grounded at the worksite.

Option 2: 20-foot clearance. Ensure that no part of the crane, load line, or the load including rigging and lifting accessories, can get closer than 20 feet to the power lines.

Option 3: Use Table A - Minimum Clearance Distances. We have to determine the line's voltage and the minimum approach distance permitted under Table A.

Note: When Option 3 is used, the power line operator must provide the requested voltage information within two working days of the employer's request.

Preventing Encroachment/Electrocution:

When we use Option 2 or Option 3, we must use the following procedures to prevent any part of the crane or load from becoming too close to the live power lines.

First, we will conduct a planning meeting with the crane operator and the other workers who will be in the area of the crane and/or load to review the location of the power lines, and the steps that will be implemented to prevent encroachment/electrocution.

We will erect and maintain an elevated warning line, barricade, or line of signs, in view of the operator and equipped with flags or similar high-visibility markings. If we use Option 2 it will be placed 20 feet from the power line. If we use Option 3 it will be placed at the minimum approach distance under Table A.

If the operator is unable to see the elevated warning line, then we must use a dedicated spotter and implement one of the following measures:

- a. A proximity alarm set to give the operator sufficient warning to prevent encroachment.
- b. A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.
- c. A device that automatically limits range of movement that is set to prevent encroachment.
- d. An insulating link/device installed at a point between the end of the load line and the load.

Operations Below Power Lines:

No part of the crane, load line, or the load including the rigging and lifting accessories is allowed below a power line unless we have confirmed that the power line operator has de-energized the lines and we can see that the power line has been grounded at the job site.

Exceptions: Work can be performed under live power lines if we meet one of the following:

- a. The work is covered by 1926 Subpart V - Electric Power Transmission and Distribution.
- b. We are using a crane with non-extensible booms and the uppermost part with the boom at true vertical, would be more than 20 feet below the plane of the power line, or more than the Table A minimum clearance distance below the plane of the power line.
- c. We are using a crane with articulating or extensible booms and the uppermost part, with the boom in the fully extended position at true vertical, would be more than 20 feet below the plane of the power line or more than the Table A minimum clearance distance below the plane of the power line.
- d. We can demonstrate that it is infeasible to de-energize the overhead power lines and we meet the requirements of 1926.1410 - Power Line Safety (All Voltages) Equipment Operations Closer than the Table A Zone.

Operations Closer than Specified in Table A

It is prohibited for any part of the crane, load line, or the load including rigging and lifting accessories to get closer to an energized power line than the minimum approach distances specified under Table A - Minimum Clearance Distances.

If it has been determined that work operations must be performed closer than allowable under Table A, we must consult the power line operator to de-energize the line.

If, after consultation with the utility operator, it is determined that it is infeasible to de-energize and ground the power line or move it then work can only be performed under closely monitored conditions.

First the power line operator, or a registered professional engineer who is a qualified person with respect to electrical power transmission and distribution, must determine what the minimum clearance distance that must be maintained on that site to prevent electrical contact.

After that minimum clearance distance is established, we will hold a planning meeting with the power line operator, or a registered professional engineer, to hold to determine the procedures that will be followed to prevent electrical contact and electrocution. At a minimum these procedures must include:

- a. If the power line is equipped with a device that automatically reenergizes the circuit in the event of a power line contact, the device must be made inoperative before work begins.
- b. A dedicated spotter must be used and must be in continuous contact with the operator.
- c. We must use an elevated warning line or barricade to prevent electrical contact. It cannot be attached to the crane, must be equipped with high-visibility markings, and be in view of the operator either directly or through video equipment.
- d. We must install an insulating link/device above the load up until passed the point of possible contact.
- e. We will use nonconductive rigging if it may come within the minimum distance from Table A during the operation.

- f. If the crane has a device that automatically limits range of movement, it must be used and set to prevent any part of the crane, load line, or load including the rigging and lifting accessories from coming closer than the minimum approach distances set for that specific job site.
- g. If we must use a tag line, it must be nonconductive.
- h. Barricades must be put up forming a perimeter at least 10 feet away from the crane to prevent unauthorized personnel from entering the work area. If obstacles prevent the barricade from being at least 10 feet away, then they must be as far from the crane as possible.
- i. Workers other than the operator are prohibited from touching the load line above the insulating link/device and crane. Operators remotely operating the crane from the ground must use wireless controls that isolate the operator from the crane or insulating mats that insulate the operator from the ground.
- j. Only personnel essential to the operation are permitted to be in the area of the crane and load.
- k. The crane must be properly grounded.
- l. An insulating line hose or cover-up must be installed by the power line operator except when such devices are unavailable for the line voltages involved.

All the procedures developed in the planning meeting will be documented and made immediately available on-site.

Before work begins, KirbyCo Builders and power line operator, or registered professional engineer, will meet with the crane operator and the other workers who will be in the area of the crane or load to review and implement the procedures developed to prevent breaching the minimum approach distance.

We must work with the power line operator or registered professional engineer to identify one person who will direct the implementation of the procedures. This person will direct the implementation of the procedures and has the authority to stop work at any time to ensure safety.

If a problem occurs while implementing these procedures, or something indicates that those procedures are inadequate to prevent electrocution, we will safely stop operations and either develop new procedures.

Signals

A signal person must be provided in each of the following situations:

- a. The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator.
- b. When the crane is traveling, the view in the direction of travel is obstructed.
- c. Due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary.

Work Control Area

Swing radius hazards:

The requirements below apply where there are accessible areas in which the crane's rotating superstructure (whether permanently or temporarily mounted) poses a reasonably foreseeable risk of:

- a. Striking and injuring an employee; or
- b. Pinching/crushing an employee against another part of the crane or another object.

To prevent employees from entering these hazard areas, the below procedures will be accomplished:

- a. Train each employee assigned to work on or near the crane ("authorized personnel") in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.
- b. Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas. Exception: When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the crane, the hazard areas must be clearly marked by a combination of warning signs (such as "Danger – Swing/Crush Zone") and high visibility markings on the crane that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.

Protecting employees in the hazard area:

Before an employee goes to a location in the hazard area that is out of view of the operator, the employee (or someone instructed by the employee) must ensure that the operator is informed that he/she is going to that location.

Where the operator knows that an employee went to a location within the swing area radius, the operator must not rotate the superstructure until the operator is informed in accordance with a prearranged system of communication that the employee is in a safe position.

Where any part of a crane is within the working radius of another crane, the controlling entity must institute a system to coordinate operations. If there is no controlling entity, the employer (if there is only one employer operating the multiple pieces of crane), or employers, must institute such a system.

Equipment Modifications

Modifications or additions which affect the capacity or safe operation of the crane are prohibited except when one of the below requirements have been met.

- a. Manufacturer review and approval.
 1. The manufacturer approves the modifications/additions in writing.
 2. The load charts, procedures, instruction manuals and instruction plates/tags/decals are modified as necessary to accord with the modification/addition.
 3. The original safety factor of the equipment is not reduced.

- b. Manufacturer refusal to review request.

The manufacturer is provided a detailed description of the proposed modification/addition, is asked to approve the modification/ addition, but it declines to review the technical merits of the proposal or fails, within 30 days, to acknowledge the request or initiate the review, and all of the following are met:

1. A registered professional engineer who is a qualified person with respect to the equipment involved:
 - i. Approves the modification/addition and specifies the equipment configurations to which that approval applies,
 - ii. Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition.
2. The original safety factor of the equipment is not reduced.

c. Unavailable manufacturer.

The manufacturer is unavailable and the below is met.

1. A registered professional engineer who is a qualified person with respect to the equipment involved:
 - i. Approves the modification/addition and specifies the equipment configurations to which that approval applies,
 - ii. Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition.
2. The original safety factor of the equipment is not reduced.

d. Manufacturer does not complete the review within 120 days of the request. The manufacturer is provided a detailed description of the proposed modification/addition, is asked to approve the modification/addition, agrees to review the technical merits of the proposal, but fails to complete the review of the proposal within 120 days of the date it was provided the detailed description of the proposed modification/addition, and the below is met.

1. A registered professional engineer who is a qualified person with respect to the equipment involved:
 - i. Approves the modification/addition and specifies the equipment configurations to which that approval applies,
 - ii. Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition.
2. The original safety factor of the equipment is not reduced.

e. Multiple manufacturers of equipment designed for use on marine work sites. The equipment is designed for marine work sites, contains major structural components from more than one manufacturer, and the below is met.

1. A registered professional engineer who is a qualified person with respect to the equipment involved:
 - i. Approves the modification/addition and specifies the equipment configurations to which that approval applies,
 - ii. Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition.
2. The original safety factor of the equipment is not reduced.

Modifications or additions which affect the capacity or safe operation of the crane are prohibited where the manufacturer, after a review of the technical safety merits of the proposed modification/addition, rejects the proposal and explains the reasons for the rejection in a written response.

Traveling Under or Near Overhead Powerlines without a Load

The following are procedures and criteria for cranes traveling under or near a power line on a construction site **without** a load. KirbyCo Builders will ensure that following requirements are met.

The boom/mast and boom/mast support system are lowered sufficiently to meet the clearances specified in Table T - Minimum Clearance Distances while Traveling with no Load.

Table T—Minimum Clearance Distances While Traveling With No Load	
Voltage (nominal, kV, alternating current)	While traveling—minimum clearance distance (feet)
up to 0.75	4
over .75 to 50	6
over 50 to 345	10
over 345 to 750	16
Over 750 to 1,000	20
Over 1,000	As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

While moving, the operator must take consider the terrain and drive a speed that doesn't allow the crane to move within the minimum clearance distances specified in Table T.

If any part of the crane will get closer than 20 feet to the power line while moving, the employer must ensure that a dedicated spotter is in continuous contact with the operator. The dedicated spotter must:

- Be positioned to effectively gauge the clearance distance.
- When necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.
- Give timely information to the operator so that the required clearance distance can be maintained.

When traveling at night, or in conditions of poor visibility, we must also ensure that:

- a. The power lines are illuminated or another means of identifying the location of the lines is used.
- b. A safe path of travel is identified and used.

Training

Operator Training, Qualification and Certification

Note: A state or local license is required if:

- a. Working within a state or locality that has licensing requirements, and
- b. The licensing program meets the licensing and certification criteria listed in subpart CC.
- c. A state or local license is valid for the period of time stipulated by the licensing office, but no longer than 5 years. It is portable only within the jurisdiction of the issuing agency.

Note: Written tests may be administered in a language understood by the operator candidate. When an operator's testing is based on a language other than English, it must be noted on the certificate.

All costs associated with training will be at no expense to the employee.

During the period November 8, 2010 through November 9, 2018, all operators must be competent to operate a crane safely, and trained and evaluated on that training before operating a crane.

As of November 10, 2018, all operators must be certified or qualified.

Accredited Crane Operator Testing Organization

An operator will be deemed qualified to operate a particular crane if they are certified for that type and capacity of crane, or for higher-capacity crane of that type. If no accredited testing agency offers certification examinations for a particular type and/or capacity of crane, an operator will be deemed qualified to operate that crane if they have been certified for the type/capacity that is most similar to that crane and for which a certification examination is available.

The operator's certificate must state the type/capacity of crane for which the operator is certified.

To achieve the above qualification, the operator must have received certification by an **accredited crane operator testing organization**.

Certification issued by an accredited crane operator testing organization is both portable and valid for 5 years.

Audited Employer Program

Currently this option will not be used because:

- a. It is not portable.
- b. It is time and manpower consuming.
- c. It requires monitoring and outside approvals.

If this is used in the future, it will be in accordance with 1926.1427(c).

Operator-in-training:

An employee who is not qualified or certified is permitted to operate a crane only as an operator-in-training and only where the below requirements are met:

- a. The employer must provide each operator-in-training with sufficient training prior to operating the crane to enable the operator-in-training to operate it safely under limitations established by 29 CFR 1926.1430 (including continuous monitoring) and any additional limitations established by the employer.
- b. The tasks performed by the operator-in-training while operating the crane must be within the operator-in-training's ability.
- c. While operating the crane, the operator-in-training must be continuously monitored by an individual ("**operator's trainer**") who meets all of the following requirements:
 1. The operator's trainer is the employee or agent of KirbyCo Builders.
 2. The operator's trainer is either a certified operator under 29 CFR 1926.1430 or has passed the written portion of a certification test, and is familiar with the proper use of the crane's controls.
 3. While monitoring the operator-in-training, the operator's trainer performs no tasks that detract from the trainer's ability to monitor the operator-in-training.
 4. For cranes other than tower cranes: the operator's trainer and the operator-in-training must be in direct line of sight of each other. In addition, they must communicate verbally or by hand signals. For tower cranes: the operator's trainer and the operator-in-training must be in direct communication with each other.

Rigger Training, Qualification and Certification

All costs associated with training will be at no expense to the employee. Riggers must be qualified. A qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Signal Person Training, Qualification and Certification

All costs associated with training will be at no expense to the employee.

Signal persons must be qualified by either:

- a. A third party evaluator - Documentation is Portable, or
- b. An employer qualified evaluator - Documentation is not Portable.

The training must include either a verbal or written test, PLUS a practical test. A certificate of completion will be provided upon successful completion of the training.

Training will include, but not be limited to, the following types of signals.

Hand Signals:

Note: Hand signal charts must be either posted on the crane or conspicuously posted in the vicinity of the hoisting operations. These charts will comply with the instructions found in Appendix A to Subpart CC of Part 1926—Standard Hand Signals.

When using hand signals, the Standard Method must be used (see Note, above).

Exception: Where use of the Standard Method for hand signals is infeasible, or where an operation or use of an attachment is not covered in the Standard Method, non-standard hand signals may be used in accordance with 29 CFR 1926.1419 (c)(2).

Non-Standard Hand Signals:

When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used.

Radio, Telephone or Other Electronic Transmission of Signals:

The device(s) used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.

Signal transmission must be through a dedicated channel, except:

- a. Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations.
- b. Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks.

The operator's reception of signals must be by a hands-free system.

New Signals:

Signals other than hand, voice, or audible signals may be used where it may be demonstrated that:

- a. The new signals provide at least equally effective communication as voice audible, or Standard Method hand signals, or
- b. The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.

Voice Signals:

If voice signals are used, prior to beginning operations, the operator, signal person and lift director (if there is one), must contact each other and agree on the voice signals that will be used. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, there is confusion about the voice signals or a voice signal is to be changed.

Each voice signal must contain the following three elements, given in the following order: function (such as hoist, boom, etc.), direction; distance and/or speed; function stop command.

The operator, signal person and lift director (if there is one), must be able to effectively communicate in the language used.

Additional Signal Information:

- a. The signals used (hand, voice, audible, or new), and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.) must be appropriate for the site conditions.
- b. During operations requiring signals, the ability to transmit signals between the operator and signal person must be maintained. If that ability is interrupted at any time the operator must safely stop operations requiring signals until it is reestablished and a proper signal is given and understood.
- c. If the operator becomes aware of a safety problem and needs to communicate with the signal person, the operator must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.
- d. Only one person may give signals to a crane/derrick at a time, except in circumstances covered by the below:
 - 1. Anyone who becomes aware of a safety problem must alert the operator or signal person by giving the stop or emergency stop signal.

Note: 29 CFR 1926.1417(y) requires the operator to obey a stop or emergency stop signal.

- e. All directions given to the operator by the signal person must be given from the operator's direction perspective.

Where a signal person(s) is in communication with more than one crane/derrick, a system must be used for identifying the crane/derrick each signal is for, as follows:

- a. For each signal, prior to giving the function/direction, the signal person must identify the crane/derrick the signal is for, or
- b. Must use an equally effective method of identifying which crane/derrick the signal is for.

Power Lines Training

We must ensure that each operator and crew member assigned to work with cranes receive the necessary training. The training must cover the following:

- a. The procedures to be followed in the event of electrical contact with a power line. Such training must include:
 1. Information regarding the danger of electrocution from the operator simultaneously touching the crane and the ground.
 2. The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab.
 3. The safest means of evacuating from a crane that may be energized.
 4. The danger of the potentially energized zone around the crane (step potential).
 5. The need for crew in the area to avoid approaching or touching the crane and the load.
 6. Safe clearance distance from power lines.
- b. Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.
- c. Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated.
- d. The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.
- e. The procedures to be followed to properly ground the crane and the limitations of grounding.
- f. Employees working as dedicated spotters must be trained to enable them to effectively perform their task.

Fall Protection

29 CFR 1926 Subpart M – Fall Protection

Policy Statement

Compliance with 29 CFR 1926.502(d)(20)

29 CFR 1926.502(d)(20) states: “The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.”

Per OSHA interpretation letters [J. Nigel Ellis (May 11, 1999) & Charles Hill (August 14, 2000)], the hazard being addressed by 29 CFR 1926.502(d)(20) is being suspended by the fall arrest system after an arrested fall.

Prompt rescue is not defined, but it does imply that rescue be performed quickly – in time to prevent serious injury to the suspended worker.

As a matter of policy, under no circumstances will employees of KirbyCo Builders attempt to perform a self-rescue.

The rationale for this policy is as follows:

- a. Expecting a suspended employee to perform self-rescue presupposes that the employee is:
 1. Of clear mind after the fall, and
 2. In excellent physical condition, and
 3. Has not sustained any injuries from the fall arrest, and
 4. Did not have a medical event that caused the fall in the first place (fainting, for example).
- b. Because employees at KirbyCo Builders are not professional rescue persons, in depth self-rescue training would be required and practice self-rescue exercises performed for each possible combination of fall scenarios.
- c. Specialized self-rescue equipment and training on that equipment would be required.
- d. Self-rescue is not required by 29 CFR 1926.502(d)(20).

Prompt Rescue Procedures:

As a matter of policy, an employee performing work requiring a personal fall arrest system **will not work alone**. He/she will be in sight of another employee using a personal fall arrest system or be monitored by a safety monitor whose sole job will be to ensure there is not a fall event that goes unnoticed.

Prior to performing work requiring a personal fall arrest system, Chris Kirby, our Safety Program administrator, or a designated competent person, will:

- a. Assess the possible fall scenarios; and
- b. Take inventory of in-house equipment that is readily available for possible rescue (ladders, forklifts, mobile scaffold, etc.); and
- c. Be prepared to implement a plan of action utilizing our in-house equipment should a fall occur; or
- d. Call an emergency rescue service and give them:
 1. Our exact location.
 2. A quick synopsis of what happened.
 3. The height of the suspended person.
 4. Known or suspected injuries.

Chris Kirby
Safety Director

Overview

One of the most serious hazards faced by the employees of KirbyCo Builders is falls from heights. Our Fall Protection Program has been developed to prevent injury from falls of six (6) feet or more from a walking/working surface to a lower level, to prevent objects falling from above and striking persons below, and to prevent job site persons from falling into holes.

Within the context of this program, the term “fall hazard” does not refer to tripping and falling, which is addressed in our general safety & health program, nor does it apply to falling off a ladder or scaffold. Scaffold and ladder safety is addressed within its own program.

A copy of our Fall Protection **Program** can be found readily accessible to our employees on appropriate job sites.

A copy of our Fall Protection **Plan** will be found on every applicable job site.

On all job sites where fall hazards exist, there will be at least one competent person who has the training and ability to identify fall hazards and the authority to ensure that proper fall protection systems are properly implemented.

The following areas of concern are addressed by this Program:

- a. The need to know where fall protection is required.
- b. Selection of fall protection systems which are appropriate for given situations.
- c. Construction and installation of safety systems.
- d. Supervision of employees.
- e. Implementation of safe work procedures.
- f. Training in selection, use, and maintenance of fall protection systems.

Our Fall Protection Program may be reviewed at any time by employees at KirbyCo Builders. Should a question arise concerning this Program, personnel are encouraged to consult with their supervisor, or Chris Kirby, our Fall Protection Program Administrator.

Duties of the Program Administrator

The duties of Chris Kirby include:

- a. Training of personnel.
- b. Maintenance of training records.
- c. Random, unannounced job site inspections to assure compliance with both OSHA standards and company safety policies.
- d. Resolution of specific problems that may present themselves regarding a particular job site situation.
- e. Designating a competent (by training or experience) person at each applicable job site who will ensure:
 1. A copy of our fall protection program/plan is readily accessible on appropriate job sites.
 2. Subcontractors with whom we may work are appropriately trained in fall protection.
 3. A written certification record has been prepared documenting that employees who have potential exposure to fall hazards at the job site have received the required training in protection.
 4. The fall protection system(s) utilized at the job site are appropriate for the hazard(s) present.
 5. That, before any work is initiated, the walking/working surfaces at the job site are capable of supporting both our personnel and equipment.

Chris Kirby will be familiar with all applicable standards and will keep up-to-date of developments in the field of fall protection.

Pre-Project Planning

Fall protection requires a joint effort by personnel KirbyCo Builders, and the specialty subcontractors who may be working with us, to identify work situations in which fall hazards exist, determine the most appropriate fall protection system to be utilized, and to ensure that all persons understand the proper methods of utilizing the selected fall protection systems. A pre-construction survey by a competent person will often provide the information needed to make these determinations.

Fall protection system requirements may change during a project and the competent person on site will ensure that fall protection is maintained at all times. Care will be taken to assure that load limits are not exceeded on walking/working surfaces and attachment points and hardware is capable of withstanding (with the appropriate safety factor) the potential forces that may be generated during an actual fall incident.

Fall protection hardware and equipment owned, rented, or leased will be NIOSH/ANSI approved and it is assumed that the manufacturer's technical specifications and capabilities are accurate.

From the very inception of a potential project (pre-bid) to completion, fall protection needs and costs will be factored in.

Definitions

There are a number of terms and phrases, not common in everyday life, which must be understood to grasp the thrust of this Fall Protection Program. For those employees directly involved with this Program or affected by it, there are specific requirements and procedures which would be meaningless without an understanding of the "language" of our Fall Protection Program.

Note: Words used within the definitions which are themselves defined are printed in bold italic.

ANCHORAGE: a secure point of attachment for *lifelines*, *lanyards* or *deceleration devices*.

BODY HARNESS: straps which may be secured about the employee in a manner that will distribute the fall arrest over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a *personal fall arrest system*.

BUCKLE: any device for holding the *body harness* closed around the employee's body.

CARABINER: an oval metal ring with a snap link used to fasten a rope to the piton [a spike (attachment) with an eye to which a rope can be secured.]

CFR: Code of Federal Regulations.

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

CONNECTOR: a device which is used to couple (connect) parts of the **personal fall arrest system** and **positioning device systems** together. It may be an independent component of the system, such as a **carabineer**, or it may be an integral component of part of the system (such as a **buckle** or d-ring sewn into a self-retracting **lanyard**).

CONTROLLED ACCESS ZONE (CAZ): an area in which certain work (e.g., **overhand bricklaying**) may take place without the use of **guardrail systems**, **personal fall arrest systems**, or safety net systems; access to the zone is controlled.

DANGEROUS EQUIPMENT: equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

DECELERATION DEVICE: any mechanism, such as a **rope grab**, rip-stitch **lanyard**, specially-woven **lanyard**, tearing or deforming **lanyards**, automatic self-retracting **lifelines/lanyards**, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

DECELERATION DISTANCE: the additional vertical distance a falling employee travels from the point at which the **deceleration device** begins to operate before stopping, excluding **lifeline** elongation and **free fall distance**. It is measured as the distance between the location of an employee's **body harness** attachment point at the moment of activation (at the onset of fall arrest forces) of the **deceleration device** during a fall, and the location of that attachment point after the employee comes to a full stop.

EQUIVALENT: alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

FAILURE: load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

FREE FALL: the act of falling before a **personal fall arrest system** begins to apply force to arrest the fall.

FREE FALL DISTANCE: the vertical displacement of the fall arrest attachment point on the employee's **body harness** between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes **deceleration distance**, and **lifeline/lanyard** elongation, but includes any **deceleration device** slide distance of **self-retracting lifeline/lanyard** extension before they operate and fall arrest forces occur.

GUARDRAIL SYSTEM: a barrier erected to prevent employees from falling to **lower levels**.

HOLE: a gap or void 2 inches (5.1 cm) or more in its least dimension, in a floor, **roof**, or other **walking/working surface**.

INFEASIBLE: it is impossible to perform the construction work using a conventional fall protection system (i.e., **guardrail system**, safety net system, or **personal fall arrest system**) or that it is technologically impossible to use any one of these systems to provide fall protection.

LANYARD: a flexible line of rope, wire rope, or strap which generally has a **connector** at each end for connecting the **body harness** to a **deceleration device**, **lifeline**, or **anchorage**.

LEADING EDGE: the edge of a floor, **roof**, or formwork for a floor or other **walking/working surface** (such as the deck) which changes location as additional floor, **roof**, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

LIFELINE: a component consisting of a flexible line for connection to an **anchorage** at one end to hang vertically (vertical lifeline), or for connection to **anchorages** at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of **personal fall arrest system** to the **anchorage**.

LOW-SLOPE ROOF: a **roof** having a slope less than or equal to 4 in 12 (vertical to horizontal).

LOWER-LEVELS: those areas or surfaces to which an employee can fall. Such areas or surfaces to include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

MECHANICAL EQUIPMENT: all motor or human propelled wheeled equipment used for **roofing work**, except wheelbarrows and mop carts.

OPENING: a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition through which employees can fall to a **lower level**.

OVERHAND BRICKLAYING AND RELATED WORK: the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

PERSONAL FALL ARREST SYSTEM: a system used to arrest an employee in a fall from a working level. It consists of an **anchorage**, **connectors**, a **body harness**, and may include a **lanyard**, **deceleration device**, **lifeline**, or suitable combination of these. **The use of body belts for fall arrest is prohibited.**

POSITIONING DEVICE SYSTEM: a **body belt** or **body harness** system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

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

ROPE GRAB: a **deceleration device** which travels on a **lifeline** and automatically, by friction, engages the **lifeline** and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

ROOF: the exterior surface on the top of a building. This does not include floors or formworks which, because a building has not been completed, temporarily become the top surface of a building.

ROOFING WORK: the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the **roof** deck.

SAFETY-MONITORING SYSTEM: a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

SELF-RETRACTING LIFELINE/LANYARD: a **deceleration device** containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

SNAPHOOK: a **connector** comprised of a hook-shaped member with a normally closed keeper of similar arrangement which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks are generally one of two types:

- a. The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or
- b. The non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. The use of a non-locking snaphook as part of **personal fall arrest systems** and **positioning device systems** is prohibited.

STEEP ROOF: a **roof** having a slope greater than 4 in 12 (vertical to horizontal).

TOEBOARDS: a low protective barrier that will prevent the fall of material and equipment to **lower levels** and provide protection from falls for personnel.

UNPROTECTED SIDES AND EDGES: any side or edge (except at entrances to points of access) of a **walking/working surface**, e.g., floor, **roof**, ramp, or runway where there is no wall or **guardrail system** at least 39 inches high.

WALKING/WORKING SURFACE: any surface, whether horizontal or vertical, on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runway, formwork and concrete reinforcing steel; not including ladders, vehicles, or trailers on which employees must be located in order to perform their job duties.

WARNING LINE SYSTEM: a barrier erected on a **roof** to warn employees that they are approaching an unprotected **roof** side or edge, and which designates an area in which **roofing work** may take place **without** the use of a guardrail, **body belt**, or safety net systems to protect employees in the area.

WORK AREA: that portion of a **walking/working surface** where job duties are being performed.

Where Fall Protection is Required

The "key" distance is six (6) feet. All employees must be aware that if there is a possibility of falling six (6) feet or more at least one (1) fall protection system will be implemented. Further, protection from being struck by falling objects from above will be provided on all job sites.

All areas identified by OSHA are included because, over time, most of these areas will present themselves on job sites even if the exposures are the result of another contractor's work.

Below listed are specific situations where fall protection systems will be utilized.

UNPROTECTED SIDES AND EDGES:

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge, which is 6 feet or more above a lower level, shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

LEADING EDGES:

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

HOIST AREAS:

Each employee in a hoist area shall be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems.

If a guardrail system is utilized in a hoist area and portions of the system are removed to facilitate the hoisting operation, and an employee must lean through the access opening or out over the edge of the access opening, that employee must be protected by a fall arrest system.

HOLES:

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

- a. Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) (regardless of height) by covers.
- b. Each employee on a walking/working surface shall be protected from objects falling through holes (regardless of height) by covers.

FORMWORK AND REINFORCING STEEL:

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

RAMPS, RUNWAYS, AND OTHER WALKWAYS:

Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet or more to lower levels by guardrail systems.

EXCAVATIONS:

Each employee at the edge of an excavation 6 feet or more in depth shall 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.

Further, each employee at the edge of a well, pit, shaft, and similar excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

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.

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

OVERHAND BRICKLAYING AND RELATED WORK:

Each employee performing overhand bricklaying and related work 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or shall work in a controlled access zone.

Each employee performing overhand bricklaying and related work who is required to reach more than 10 inches below the level of the walking/working surface on which he/she is working shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

ROOFING WORK ON LOW-SLOPED ROOFS:

Each employee engaged in roofing activities on low-sloped roofs with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and a safety net system or a warning line system and a safety monitoring system.

Note: On roofs 50 feet or less in width, the use of a safety monitoring system alone (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 toeboards, safety net systems, or personal fall arrest systems.

PRECAST CONCRETE ERECTION:

Each employee, engaged in the erection of precast concrete members (including, but not limited to the erection of wall panels, columns, beams, and floor and roof "tee") and related operations such as grouting of precast concrete members, who is 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

RESIDENTIAL CONSTRUCTION:

Each employee engaged in residential construction activities 6 feet or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems.

WALL OPENINGS:

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

WALKING/WORKING SURFACES NOT OTHERWISE ADDRESSED:

Each employee on a walking/working surface 6 feet or more above a lower level that is not addressed in the preceding categories shall be protected from falling by a guardrail system, a safety net system, or a personal fall arrest system except when:

- a. Working on scaffolds, fall protection requirements are covered by 29 CFR 1926 Subpart L.
- b. Working on certain cranes and derricks, fall protection requirements are covered by 29 CFR 1926 Subpart N.
- c. Performing steel erection work in buildings, fall protection requirements are covered by 29 CFR 1926 Subpart R.
- d. Working on certain types of equipment used in tunneling operations, fall protection requirements are covered by 29 CFR 1926 Subpart S.
- e. Engaged in the construction of electric transmission and distribution lines, equipment fall protection requirements are covered by 29 CFR 1926 Subpart V.
- f. Working on stairways and ladders fall protection requirements are covered by 29 CFR 1926 Subpart X.

Note: On multi-employer work sites, employees of all contractors and subcontractors must understand the fall protection hazards that exist and be aware of the various methods of fall protection even if they are NOT directly exposed to fall hazards in their particular work area. For example, a contractor may have a controlled access zone in place and all persons on the job site, regardless of their employer, must understand the importance of remaining outside that CAZ.

Pre-Construction Survey

Prior to the initiation of any construction project, the job site will be surveyed by a competent/qualified person to determine:

- a. If fall protection systems will be required.
- b. If fall hazards exist, the types of conventional fall protection systems to be utilized. Particular attention will be given to anchorage points, location of warning lines, etc.
- c. Rescue procedures to be used if a fall actually occurs.
- d. The load-carrying capabilities of the walking/working surface.
- e. Assuring that all personnel utilizing a fall protection system have training in that system.

This survey may be made without the use of fall protection because no work will be accomplished during this survey and installing fall protection systems would create a greater hazard.

If it is determined that certain areas within the overall worksite have fall hazards that cannot be addressed with conventional fall protection systems (those areas being limited to leading edge work, residential construction work, and precast concrete work), **then** a Fall Protection Plan must be prepared to specifically protect employees from these hazards.

Fall Protection Systems

GUARDRAIL SYSTEM:

A guardrail system is a physical barrier erected to prevent employees from falling to lower levels.

Specific guardrail systems criteria are found in 29 CFR 1926.502(b) and we will erect guardrail systems that comply with the cited criteria.

The main advantage of a guardrail system is that it is a “passive” system which, once installed, requires no employee involvement in its function. A guardrail will stop an employee who inadvertently walks into it.

A guardrail system is an acceptable fall protection system in each of the OSHA designated work areas, except one: “Formwork and Reinforcing Steel.”

GUARDRAIL SYSTEMS AT HOISTING AREAS:

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

Note: If a portion of the guardrail system is removed at a hoisting area to facilitate the hoisting operations and an employee must lean out over the opening, then that employee must be protected by a personal fall arrest system. In this instance it is important to remember that the personal fall arrest system may not be attached to the guardrail system.

GUARDRAIL SYSTEMS AT HOLES:

Guardrail systems used at holes shall be erected on all unprotected sides of the edges of the hole.

When the hole is to be used for the passage of materials, the hole shall not have more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover **or** protected with a guardrail system on all unprotected sides or edges.

Note: Guardrails need not be erected around holes while employees are working at the hole, passing materials through the hole, etc. When work is completed around the hole, the hole must be protected by guardrails on all sides of the hole or by covers.

Guardrail systems used around holes which are used as points of access (such as ladder ways) will be provided with a gate or be offset so that a person cannot walk directly into the hole.

GUARDRAIL SYSTEMS ON RAMPS AND RUNWAYS:

Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge. Ramps, runways, and other walkways on which employees need protection from falling 6 feet or more to a lower level must be protected by a guardrail system and only a guardrail system.

PERSONAL FALL ARREST SYSTEM:

A personal fall arrest system is, as the name implies, a means of safely decelerating a falling body before a lower level is hit. The three (3) main components of a personal fall arrest system are the:

- a. Anchorage point
- b. Lanyard
- c. Body harness

Note: Body belts will not be used in a personal fall arrest system.

Specific personal fall arrest systems criteria are found in 29 CFR 1926.502(d) and we will use personal fall arrest systems that comply with the cited criteria.

The tie-off attachment point must be at or above the connection point on the harness to prevent additional free fall distance.

As are guardrails, personal fall arrest systems are “passive” and require no employee involvement once they are properly rigged.

For all practical purposes, d-rings and locking type snaphooks shall have a minimum tensile strength of 5,000 pounds and lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

Anchorage must be capable of supporting 5,000 per employee.

Anchorage used in personal fall arrest systems must be independent of any anchorage being used to support or suspend platforms.

Note: Knots in a rope lanyard or lifeline can reduce its strength by as much as 50% and having a lanyard go over or around sharp edges can completely destroy its effectiveness.

With the exception that harnesses and components may be used as positioning device systems, personal fall arrest system components may not be used for purposes other than that for which they were designed.

Positioning device system components shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.

Should a personal fall arrest system actually be used to stop a fall, it will be removed from service and not used again until inspected and determined to be undamaged and suitable for reuse by a competent person.

SAFETY NET SYSTEM:

Specific safety net systems criteria are found in 29 CFR 1926.502(c).

Safety nets will be installed as close as practical under the walking/working surface on which employees are working and in no case shall they be more than 30 feet below such level.

Safety nets shall be inspected at least once per week and after an occurrence which could affect the integrity of the system. Defective nets will not be used.

All items that have fallen in a safety net will be removed as soon as possible and at least before the next work shift.

Safety nets will be drop-tested at the job site after initial installation and before being used as a fall protection system, whenever relocated, after major repair, and at six-month intervals if left in one place.

Note: If it is demonstrably unreasonable to perform a drop-test, a designated competent person shall prepare a certification in accordance with 29 CFR 1926.502(c)(4)ii.

WARNING LINE SYSTEM:

A warning line system is a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body harness, or safety net systems to protect employees in the area.

A warning line system is to be used only during roofing work on low-sloped roofs over 50-feet in width with unprotected sides and edges 6-feet or more above lower levels (on a simple rectangular roof, width is the lesser of the two primary overall dimensions. This is also the case with roofs which are sloped toward or away from the roof center). Most importantly, warning line systems must be used in conjunction with either a guardrail system, a safety net system, a personal fall arrest system, or a safety monitoring system.

Note: In the above scenario, either a guardrail system, a safety net system, or a personal fall arrest system alone provides adequate fall protection.

Specific warning line systems criteria are found in 29 CFR 1926.502(f) and we will use warning line systems that comply with the cited criteria.

As a general rule, warning line systems will be used in conjunction with a safety monitoring system.

A warning line made of ropes, wires, chains, and supporting stanchions will be flagged at no more than 6-foot intervals with high-visibility material. As the name implies, this line will only “warn” employees that they are approaching an unprotected side or edge. The horizontal resisting force of a warning line is 16 pounds versus 200 pounds for a guardrail system.

No personnel are allowed in the area between a roof edge and a warning line unless they are performing roofing work in that area.

Mechanical equipment on roofs shall only be used in areas that are protected by either a warning line system, a guardrail system, or a personal fall arrest system.

The warning line shall be erected around all sides of the roof work area not less than 6-feet from the roof edge unless mechanical equipment is being used. In that case, the warning line shall be erected not less than 6-feet from the roof edge which parallels the mechanical operation and not less than 10 feet from the roof edge which is perpendicular to the direction of the mechanical operation.

Points of access, material handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines. When the aforementioned areas are not in use, the warning line will be adjusted to completely seal off the work area so that a person cannot inadvertently enter the area.

SAFETY MONITORING SYSTEM:

Specific safety monitoring systems criteria are found in 29 CFR 1926.502(h) and we will use safety monitoring systems that comply with the cited criteria.

A safety monitoring system used in conjunction with a warning line system is not considered a “passive system” because it takes active employee involvement and, as such, both the Safety Monitor and the employee(s) being monitored must be alert for fall hazards.

A competent person will perform the duties of Safety Monitor. These duties include:

- a. Recognizing fall hazards,
- b. Warning the employee when it appears the employee is unaware of a fall hazard or is acting in an unsafe manner,
- c. Remaining on the same walking/working surface and within visual sighting of the employee being monitored, and
- d. Remaining close enough to communicate orally with the employee being monitored.

The Safety Monitor shall have no other responsibilities which could take the monitor’s attention from the monitoring function.

Only the employee engaged in roofing work on low-sloped roofs or an employee covered by a fall protection plan [29 CFR 1926.502(k)] is allowed in the area being protected by the Safety Monitor.

When a safety monitoring system is being used, mechanical equipment will not be used or stored in that controlled zone.

Of course, the employee being monitored is required to comply promptly with the fall hazard warnings from the Safety Monitor.

POSITIONING DEVICE SYSTEM:

A positioning device system consists of a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning. It is used during formwork and steel reinforcing.

Specific positioning device systems criteria are found in 29 CFR 1926.502(e) and we will use positioning device systems that comply with the cited criteria.

Positioning device systems must be inspected prior to each use for wear, damage, and other deterioration. Defective components must be removed from service. Components of positioning device systems must never be used for purposes other than that for which they were designed -- specifically fall protection and/or positioning on a vertical surface.

CONTROLLED ACCESS ZONE (CAZ):

A controlled access zone is an area in which certain work activity may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

Specific controlled access zone criteria are found in 29 CFR 1926.502(g). A controlled access zone will be created when appropriate.

Controlled access zones will only be used as part of a fall protection plan (reference 29 CFR 1926.502(k) and Fall Protection Plan, below) or when an employee is performing overhand bricklaying and related work.

Persons performing overhand bricklaying or related work that requires reaching more than 10 inches below the walking/working surface may not be afforded fall protection by working in a controlled access zone.

Controlled access zones are work areas that have limited access to only authorized personnel by means of control lines or other means that restrict access.

COVERS:

Covers can prevent an employee from stepping into a hole, tripping over a hole, falling through a hole, or being injured by objects falling through a hole.

Note: When work is completed around a hole, the hole must be protected by guardrails on all sides of the hole or by covers.

Specific cover criteria are found in 29 CFR 1926.502(i) and we will use covers that comply with the cited criteria.

Covers must be capable of supporting, without failure, twice the weight of the employees, equipment, and/or materials that may be imposed upon them.

Covers, when used, must be secured to prevent accidental displacement by wind, equipment, or employees.

All covers must be color coded or marked with the word: "HOLE" or "COVER" to identify the hazard.

Note: The above does not apply to cast iron manhole covers or roadway steel grates.

Covers, and only covers, will be used on walking/working surfaces to protect employees from tripping or stepping into or through a hole (including skylights). This provision is **regardless of the height** of the hole above a lower surface.

Covers, and only covers, will be used to protect employees from objects falling through holes (including skylights). This provision is **regardless of the height** of the hole above a lower surface.

PROTECTION FROM FALLING OBJECTS:

Specific protection from falling objects criteria are found in 29 CFR 1926.502(j) and we will use that criteria to protect employees of KirbyCo Builders from falling objects.

Covers are to be used to protect employees from objects falling through holes (including skylights) from upper surfaces regardless of heights.

Toeboards, used to prevent objects from falling on employees on a lower level must be at least 3½ inches high with not more than a ¼ inch clearance between the toeboard and the walking/working surface. When tools, materials, or equipment are piled higher than the top edge of the toeboard, paneling or screening will be erected from the top of the toeboard to the appropriate mid or top rail of the guardrail system to provide adequate protection to employees below.

Fall Protection Plan

The foregoing Fall Protection Program is not a Fall Protection Plan per se. However, implementing the preceding guidelines for conventional fall protection systems coupled with certified formal and hands-on training will provide appropriate fall protection for the employees at KirbyCo Builders.

There may be occasions where conventional fall protection systems just will not work. OSHA has determined that these occasions will be limited to:

a. Leading edge work

Note: Leading edge work involves construction which moves the location of the edge forward (backward). Working at the edge of a walking/working surface (such as a roof) is not leading edge work - it is (roofing) work at an unprotected side or edge.

b. Precast concrete construction work

c. Residential construction work

The criteria for determination that conventional fall protection systems are infeasible are: 1) it is impossible to perform construction work using conventional fall protection systems, or 2) it is technologically impossible to use conventional fall protection systems. Inconvenience and cost are not acceptable considerations.

Specific Fall Protection Plan criteria are found in 29 CFR 1926.502(k) and, if necessary, a Fall Protection Plan will be completed that complies with the cited criteria.

Fall Protection Plans must be prepared by a qualified person and developed specifically for the site where the work is to be performed. All changes to the Plan must be approved by a qualified person.

Note: A qualified person is one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. OSHA has indicated that an employer may use the services of more than one qualified person to comply with these requirements as long as (1) those persons, collectively, are qualified to prepare the fall protection plan and approve any changes; and (2) the resulting plan complies with the applicable requirements of the standards.

Fall Protection Plans must be maintained at the job site and be up to date.

The implementation of the fall protection plan must be under the supervision of a competent person.

A Fall Protection Plan must document reasons why conventional fall protection systems are infeasible and/or offer a detailed explanation why conventional fall protection systems create a greater hazard in their use than non-use.

All measures taken to reduce or eliminate fall hazards (in lieu of conventional fall protection systems) such as the use of ladders or scaffolds shall be discussed.

In each area where a conventional fall protection system cannot be used, a safety monitoring system must be utilized that conforms to the requirements of 29 CFR 1926(h).

Either the names of the employees or some other means of employee identification (such as armbands or color coded hard hats) will be used to control access to the controlled access zone.

In the event an employee falls or a serious incident occurs, the circumstances will be investigated and changes to the Fall Protection Plan will be made to prevent a reoccurrence of a similar incident.

After completion of all work, and after all fall protection systems have been removed, a competent/qualified person may survey the work areas for inspection purposes without the use of fall protection systems. Care will be taken to assure solid footing and focused attention to potential fall hazards.

There are only two (2) instances where employees may be exposed to fall hazards without the use of fall protection systems. Those times are: pre-construction activities (inspecting, investigating, or assessing the job site) and post-construction activities. During these times, no actual construction work may take place.

Accidents and Near Accidents

Accidents and near accidents involving fall hazards will be investigated by Chris Kirby to determine the cause of the incident and a method of preventing a reoccurrence. Questions to be considered are:

- a. Was the fall protection system selected appropriate for the hazard?
- b. Was the system properly installed?
- c. Was the person involved in the accident following proper procedures?
- d. Were there contributing factors such as ice, wind, debris, etc.?
- e. Is retraining or a change of the Fall Protection Plan required?

Training/Retraining

Training, which must be certified, will include the following topics:

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

Training will be conducted by competent person(s) using the below listed items as resource materials:

- a. This Fall Protection Program.
- b. The manufacturer's instruction manuals that come with fall protection equipment.
- c. OSHA standards pertaining to fall protection which are included in 29 CFR 1926 Subpart M.
- d. The competent person's work experiences.

Should the competent person, a supervisor, or Chris Kirby suspect that an employee lacks the skills needed for proper fall protection, that employee will be retrained.

Changes in the job site, types of fall protection systems, and equipment will also necessitate retraining.

Only the latest Training Certificate will be kept on file.

Fall Protection at the Job Site

A quick glance through this Fall Protection Program may leave the reader with the impression that fall protection requires an inordinate amount of attention to small details which, in practice, would render the fall protection provisions of 29 CFR 1926 Subpart M unworkable in real work situations.

The opposite is true. OSHA has gone to great lengths to make subpart M user friendly by incorporating performance-oriented criteria (as opposed to specification-oriented criteria) into their standards. Following a hazard assessment, we will select the most advantageous fall protection system that is compatible with our task needs and our protection requirements.

Lastly, while time, equipment, training, and money are devoted to fall protection systems which either physically prevent persons from falling from height, control the rate of deceleration during an actual fall, prevent objects from falling onto persons below, or warn personnel of restricted areas, we must never forget that it is important not to fall in the first place.

Accidents are more likely to occur as we become "adjusted" to working at height. Most slips, trips and falls are preventable. Proper footwear, wearing hard hats when there is a possibility of falling objects, cleaning up of debris, and paying attention to footing, hand holds, and edges is as important as the fall protection systems themselves.

Residential Construction

Significant Changes from the Enhanced Enforcement Program (EEP)

This Instruction cancels OSHA Instruction STD 03-00-001, dated June 18, 1999, the Agency's interim enforcement policy on fall protection for specified residential construction activities, and replaces it with new compliance guidance.

Employers engaged in residential construction who wish to use alternative fall protection measures must meet the requirements in 29 CFR 1926.501(b)(13) and 29 CFR 1926.502(k).

Fall protection plans used to comply with 29 CFR 1926.501(b)(13) and 29 CFR 1926.502(k) must be documented and site-specific.

This instruction interprets "residential construction" for purposes of 29 CFR 1926.501(b)(13) to include two elements: (1) a residence requirement; and (2) a wood frame construction requirement.

ENFORCEMENT DATE: June 16, 2011

29 CFR 1926.501(b)(13):

Each employee engaged in residential construction activities 6 feet (1.8 m) or more above lower levels shall be protected by guardrail systems, safety net system, or personal fall arrest system unless another provision in paragraph (b) of this section provides for an alternative fall protection measure. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of 1926.502.

Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 1926.502(k) for a particular job site situation, in lieu of implementing any of those systems.

29 CFR 1926.502(k):

"Fall protection plan." This option is available only to employees engaged in leading edge work, precast concrete erection work, or residential construction work (See 29 CFR 1926.501(b)(2), (b)(12), and (b)(13)), who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan must conform to the following provisions.

- a. The fall protection plan shall be prepared by a qualified person and developed specifically for the site where the leading edge work, precast concrete work, or residential construction work is being performed and the plan must be maintained up to date.
- b. Any changes to the fall protection plan shall be approved by a qualified person.
- c. A copy of the fall protection plan with all approved changes shall be maintained at the job site.
- d. The implementation of the fall protection plan shall be under the supervision of a competent person.
- e. The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety nets systems) are infeasible, or why their use would create a greater hazard.

- f. The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.
- g. The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in 29 CFR 1926.502(g) of this section.
- h. Where no other alternative measure has been implemented, the employer shall implement a safety monitoring system in conformance with 29 CFR 1926.502(h).
- i. The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones.
- j. In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents.

KirbyCo Builders

Fall Protection Plan

(Required when standard fall protection systems are not feasible)

With changes: _____
(If no changes, enter "None")

This Fall Protection Plan is specific for the following project:

Project Name: _____

Location of Job: _____

Date Plan Prepared: _____ by: _____
(Must be a Qualified Person)

Date Plan Modified: _____ by: _____
(Must be a Qualified Person)

Date Plan Modified: _____ by: _____
(Must be a Qualified Person)

Plan Approved by: _____

Plan Supervised by: _____

POLICY STATEMENT

This Fall Protection Program has been developed to protect our employees from the easily identifiable danger associated with working at height: falling. While the general concept of Fall Protection is straight forward, those employees to whom this Program applies must have specific training applicable to their individual jobs. It is recognized that the nature of fall hazards may vary from project to project and even change during a specific project. Training will be on-going to reflect the various existing work situations.

A copy of our Fall Protection Program can be found in the main office at:

9527 Hood Rd.
Jacksonville, FL 32257
904-281-5050

A copy of our Fall Protection Plan will be found on every applicable Job Site.

FALL PROTECTION SYSTEMS TO BE USED ON THIS JOB

All employees on this job/project will be protected from fall hazards by the use of one or more conventional fall protection systems. These systems include guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, warning line systems, controlled access zones, safety monitoring systems, covers, and protection from falling objects.

Further, the conventional fall protection system used in each required circumstance will be in compliance with 29 CFR 1926.502 which addresses which systems are appropriate (allowed) for specific types of work.

TRAINING

All personnel at KirbyCo Builders working on this job/project have received training in our Fall Protection Program and are able to recognize fall hazards and understand procedures to minimize these hazards. Further, they have been trained, as necessary, by a competent person qualified in the following areas using both formal and hands on training:

- a. The nature of fall hazards in the work area.
- b. The procedures for erecting, maintaining, disassembling, and inspecting the fall protections to be used.
- c. The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
- d. Their role in the safety monitoring system when this system is used.
- e. The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.
- f. The procedures for handling and storage of equipment and materials and the erection of overhead protection.
- g. The roll of employees in fall protection plans.

ENFORCEMENT

Awareness of and respect for fall hazards, and compliance with all safety rules are of great importance. Appropriate disciplinary action will be taken should an employee disregard the safety guidelines of KirbyCo Builders.

ACCIDENT INVESTIGATION

All accidents that result in injury to employees, regardless of their nature, will be investigated and reported. It is important that documentation of accidents take place as soon as possible so that the cause may be determined and steps may be taken to prevent a reoccurrence.

CHANGES TO THIS PLAN

Changes to this plan, specifically a deviation from conventional fall protection systems, will be documented by a qualified person whose name appears on the front of this fall protection plan.

Changes will be limited to:

a. Leading edge work

Note: Leading edge work involves construction which moves the location of the edge forward (backward). Working at the edge of a walking/working surface (such as a roof) is not leading edge work - it is (roofing) work at an unprotected side or edge.

b. Precast concrete construction work

c. Residential construction work

The criteria for determination that a conventional fall protection is infeasible is that it is impossible to perform construction work with a conventional fall protection system or it is technologically impossible to use a conventional fall protection system. Inconvenience and cost are not acceptable considerations.

Specific Fall Protection Plan criteria are found in 29 CFR 1926.502(k) and we will, if necessary, create a Fall Protection Plans that comply with the cited criteria.

A separate change will be made for each situation where conventional fall systems cannot be used.

KirbyCo Builders

Changes to Fall Protection Plan

CHANGE NUMBER: _____

This change to the Fall Protection Plan for the below listed project will be attached to the original Fall Protection Plan and a copy will be available at the job site.

Project Name: _____

Location of Job: _____

Date Change Prepared: _____ by: _____
(Must be a Qualified Person)

Date Change Modified: _____ by: _____
(Must be a Qualified Person)

Change Approved by: _____

Change Supervised by: _____

Reference the above.

Changes to this Fall Protection Plan for this specific project are required for the following reason(s):

Specific work that requires fall protection other than conventional fall protection:

Specific work areas where the above work will take place:

Before any non-conventional fall protections are used as part of the work plan, a controlled access zone (CAZ) shall be clearly defined by the competent person _____ as an

(Name(s) of Competent Person)

area where a recognized hazard exists. The demarcation of the CAZ will be communicated by the competent person in a recognized manner such as:

Circle one or more of the below:

- a. signs
- b. wires
- c. tapes
- d. ropes
- e. chains
- f. other: _____

All access to the CAZ will be restricted to authorized entrants. Those entrants will be identified by

(Color hard hats; arm bands, etc.)

and are listed below:

_____	_____	_____
_____	_____	_____
_____	_____	_____

The competent person will ensure the protective elements of the CAZ are implemented prior to the beginning of work.

Specific reasons why conventional fall protection is either infeasible or creates a greater hazard:

Specific measures to be taken to reduce or eliminate fall hazards for personnel who cannot be provided conventional fall protection:

In the above CAZ, a safety monitoring system will be implemented in conformance with 29 CFR 1926.502(h).

KirbyCo Builders

Safety Net Installation Certification

This is to certify that the Safety Net identified below was installed with sufficient clearance under it to prevent contact with the surface or structures below when subjected to an impact force equivalent to the drop test specified in 29 CFR 1926.502(c)(4)(i).

SAFETY NET MAKE: _____

SAFETY NET MODEL: _____

SAFETY NET LOCATION: _____

It was found to be unreasonable to perform the below listed drop test for the following reasons:

Drop Test (Circle appropriate drop test to which the certification applies):

- a. After initial installation and before using drop test.
- b. After relocation drop test.
- c. After major repair drop test.
- d. After remaining in the same location for 6 months drop test.

(Competent Person)

(Date)

Forklifts

29 CFR 1910.178 - Powered Industrial Trucks

Overview

Forklifts are designed to move items quickly, safely, and cleanly. Forklift training would also apply to numerous types of powered industrial trucks such as: tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines.

While many safety features are designed into forklifts, accidents still happen and they are generally the result of operator error.

There is a general agreement among safety professionals, as well as OSHA, that requiring training for all persons (including part-time, seasonal, and temporary employees) who operate forklifts will significantly reduce the accident and injury rates.

This program has been developed to make the truck operators at KirbyCo Builders aware of the hazards associated with motorized truck use as well as to provide guidance for safe truck operations.

Persons will be authorized to operate the forklifts owned by KirbyCo Builders only after they have successfully demonstrated their understanding of proper procedures for truck inspection, use, and refueling/recharging. Operators will demonstrate their truck knowledge and abilities by passing a written test and performing designated truck maneuvers. All truck operators will be evaluated by , our Forklift Program Administrator, or a designated competent person.

Because of their power, weight, size, restricted visibility, and, often, high center of gravity, operation of industrial trucks takes skill and attention to detail. One moment of inattention can lead to a major mishap in an instant. Additionally, the load presents potential hazards if not properly secured, balanced, and/or properly placed on the truck.

In accordance with 29 CFR 1910.178(b)12, , or another competent person will determine whether the atmosphere or location in which the trucks will operate is hazardous or non-hazardous and, after further assessing our needs, will determine which types of trucks are appropriate and allowed for our specific operations.

In the unlikely event that unsafe industrial motor truck operations are observed, retraining will be given with emphasis on correcting the improper behavior. To prevent the possibility of severe injury to the operator (or a bystander), forklifts must be operated in a professional manner and anything less will not be tolerated.

All truck operators will have ready access to this program, appropriate OSHA standards, and the truck owner/operator manuals.

General Requirements

All truck operators must be thoroughly familiar with the truck, itself. This includes knowing:

- a. Instinctively, what each and every control does.
- b. How to perform a truck safety check.
- c. The truck's limitations such as maximum load, height and width, visibility, stability, and surface requirements.
- d. The truck's stopping and turning ability and its effect on loads.

The below safety rules and guidelines to which one must adhere while operating a forklift have been established. These rules are designed to protect the operator and/or persons adjacent to truck operations.

Specifically:

1. No person shall operate one of trucks unless authorized in writing.
 - a. Prior to authorization, the operator will have read this program, received training, passed a quiz on truck operations, and been evaluated on operational skills.
 - b. Authorization to operate one type of truck does not automatically authorize a person to operate all trucks. Different power sources, visibility restrictions, controls, and capacities may dictate, in the judgment of Chris Kirby, that a separate certification process may be required for a different type of truck. There may be instances where a new vehicle does not necessitate new training and a demonstration of proficiency. A newer model of a currently used truck may be identical to the truck the operator is qualified on as far as safety and operations are concerned. As a general rule, each **type** of truck has its own characteristics, limitations, and idiosyncrasies -- each **model** of a type of truck may or may not be unique.
2. No riders are allowed on forklift unless:
 - a. The truck is specifically designed for such use.
 - b. The rider is authorized by Chris Kirby.

NOTE: Forklifts are generally designed to move product, supplies and equipment, not personnel.

3. Chris Kirby will revoke the authority to operate a truck if unsafe acts are observed or it is apparent that the operator has not retained the knowledge and job skills necessary to safely perform truck operations.
 - a. An operator who has lost his authorization to operate a truck will be retrained, reevaluated, and, if appropriate, re-certified.
4. At the beginning of each shift, the operator will inspect the truck using our Forklift Daily Checklist.
 - a. If deficiencies relating to safety are found, the deficiencies will be noted on the Checklist and reported to Chris Kirby, or other designated person. The vehicle will not be used until safety defects are repaired.
 - b. If cosmetic damage is discovered during the daily check, it will be noted on the Checklist, but the truck will be used. Cosmetic faults will not delay our operations.

Hazards

The major personal safety hazards involved in truck operation include:

- a. Physically hitting a person/object with the truck or load.
- b. Having a load fall and hit the operator or other person.
- c. Having the truck tip and crush the operator or other person.
- d. Fire or explosion during refueling/recharging.

Below are rules and guidelines to control the hazards identified and reduce the likelihood of accident/injury. While some of the procedures may seem too obvious to mention or just plain common sense, remember this—serious, even fatal, accidents have occurred because for one split second an operator forgot or ignored a basic safety rule.

FALLING/HITTING A PERSON/OBJECT:

- a. Never drive up to a person standing in front of a fixed object.
- b. When possible, stay within delineated travel lanes or aisles.
- c. Be seen and/or heard.
- d. Ensure that adequate lighting is available.
- e. Maintain a clear view of travel. If the load blocks or restricts the view, the operator will drive with the load trailing (backwards).
- f. Slow down, sound horn, and do not pass where vision is restricted.
- g. Operate the truck at speeds that will allow it and the load to be stopped in a safe, smooth, manner.
- h. Be aware of floor conditions. Remove loose objects that have found their way to the truck travel lanes. Operate the truck at slower speeds on wet or slippery floors.
- i. Of course, stunt or reckless driving is prohibited.
- j. Be aware of the height of the truck and, if equipped, its mast and load. Carelessness can damage ceiling, lights, pipes, etc.
- k. Never allow anyone to stand or pass under an elevated portion of any truck at any time.

FALLING LOADS:

- a. Know your load – do not “over stack.” Because practically all loads lifted or hauled by a forklift are not secured to the truck, ensure the load is properly stacked. Cartons generally should be interlaced or banded.
- b. If lifting a load or pallet, get the forks (or other engaging means) as far under the load as possible.
- c. Travel with the load in the lowest position for stability as well as prevention of hitting objects overhead. If using forks, tilt the load backward for stabilization.
- d. Do not exceed the truck’s rated capacity or stack loads too high.
- e. Do not make “jerky” movements such as slamming the brakes or high speed turns.
- f. A load backrest extension will reduce the possibility of part of the load falling rearward.
- g. When using a fork lift, the forks may be tilted forward only for picking up or setting down a load.

TIPPING:

Forklifts are, by design, narrow allowing them greater access within the work setting. Unfortunately, a narrow track offers less stability. Tipping or falling off an edge (or dock) is a preventable accident by following the guidelines below. If your truck tips, keep your body and limbs within the safety of the cage. Wear a seat belt if the truck is so equipped.

- a. Stay within travel lanes.
- b. If entering a trailer, ensure:
 1. The trailer brakes are engaged.
 2. The trailer is secured from movement by means of chocks and/or a locking mechanism.
 3. The tractor is either shut off or removed from the trailer.
 4. The trailer is squared up with the dock opening and dock plates are secure.
 5. The trailer floor is capable of supporting the forklift and its load.
 6. The lighting within the trailer is adequate.

Note: Falling off a dock edge because a trailer has moved is invariably a serious accident. Do not count on the tractor-trailer driver to lock his brakes or even trust that his brakes work. Physically check and ensure that the trailer into which you are taking your forklift is flush against the dock. If possible, the trailer should be actually attached to the dock, but in all cases, it should be chocked.

- c. Travel with the load in the lowest possible position and avoid sharp turns at higher speeds as well as abrupt truck movements.
- d. Be aware of the surface on which you are traveling -- its traction, ability to hold weight, slope, and surface.

FIRE/EXPLOSION DURING REFUELING/RECHARGING:

Refueling accidents are not common experiences, however should they occur, they would be sudden and possibly catastrophic. Follow the manufacturer's owner's manual and local fire laws.

- a. There is absolutely NO SMOKING or open flame during any portion of the refueling/recharging process.
- b. Per 29 CFR 1910.110, Storage and handling of liquefied petroleum gases, paragraph (f)(7), at least one approved portable fire extinguisher having a minimum rating of 8-B, C must be readily available when refueling propane.
- c. Facilities for quick drenching of the eyes and body must be readily available.

Other Concerns

The program deals primarily with the personal safety of forklift operators at KirbyCo Builders. However, when discussing truck operations, we would be remiss if it were not pointed out that improper truck operations could also result in physical damage to products, trucks, and/or facilities. Proper truck operation will reduce personal injury accidents, and, as an added benefit, prevent general damage.

Operator Protection

A hazard assessment of forklift operations will be conducted by . Particular attention will be given to hand, head, eye, and foot protection, as well as environmental conditions such as atmospheres, heat, or cold. If the truck is equipped with a seat belt, it must be worn when the truck is moving.

Keep your limbs within the running lines of the truck and keep your hands and fingers away from moving parts -- particularly the mast on a fork lift truck.

will perform a hazard assessment of the truck operations and determine what, if any, personal protective equipment (PPE) requirements are appropriate. If PPE (examples: steel toed boots, leather gloves, hard hat, eye protection, etc.) is required, it must be worn.

Forklift Operations

In addition to safety operating practices previously identified in this manual, the following will be considered general operating procedures:

- a. Fire aisles, access to stairways, and fire equipment must be kept clear.
- b. Operators leaving their trucks must ensure the load is fully lowered, controls neutralized, and brakes set. On an incline, the wheels must be blocked. If the operator is 25 feet or more from the truck or does not have a clear view of the truck, the power to the truck must be shut off.
- c. A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car.
- d. Trucks shall not be used for opening or closing freight doors.
 1. Trucks, like all items of equipment, will be used for the purpose for which they were designed.

- e. Be aware that if the operator of a semi-trailer has placed the rear wheels in a far forward position, the trailer may act as a “teeter-totter” when a heavy forklift enters the trailer. When a trailer is not coupled to a tractor, fixed jacks may be necessary to support the semi-trailer during loading or unloading.
- f. Be aware that the overhead guard (used as protection against falling objects) is designed to prevent injury from the impact of small packages, boxes, bagged material, etc. -- it is not necessarily designed to withstand the impact of a falling capacity load.
- g. In the event persons are lifted by a truck, a lifting platform must be securely attached to the lifting mechanism and the persons on the safety platform must have means of shutting off power to the truck.
- h. If more than one truck is operated, they must be separated by a safe distance (at least three truck lengths) and they may not pass each other in intersections, blind spots, or other dangerous locations. The right of way shall be yielded to other trucks in emergency situations.
- i. Trucks traveling in the same direction shall not be passed at all.
- j. Driving on grades:
 - 1. Grades shall be ascended or descended slowly.
 - 2. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.
- k. Motorized hand trucks must enter confined areas with the load end forward.

Maintenance

While the operator is responsible for checking the truck before use, actual mechanical maintenance must be performed by an authorized person.

- a. If at any time a forklift is found to be in need of repair, defective, overheating, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.
- b. Forklifts should be kept reasonably clean and free of excess oil and grease.

Duties of the Forklift Program Administrator

The duties of Chris Kirby, our Forklift Program Administrator include:

- a. Operator training and certification.
- b. Hazard assessment of our truck operations.
- c. Identification of truck operators who, through their performance have demonstrated a lack of retained knowledge or ability to safely operate a powered truck. These people will receive retraining.
- d. Keeping up-to-date of developments in the materials handling field with an emphasis on safety.

Additionally, the administrator will ensure that all truck operators have ready access to 29 CFR 1910.178, Powered Industrial Trucks, this program, and the individual truck's Operator/Owner Manual.

Training

will administer the training portion of this program.

Interactive training will be given by a competent (one with knowledge, training, and experience) person with ample opportunity to ask questions and clarify all aspects of truck operation relating to safety.

Prior to actual truck operation on the job, all truck operators will become familiar with the contents of this program as well as the operator's manual applicable to the specific powered truck they will operate. Each operator will demonstrate an understanding of truck operations and complete a driving test which will include truck inspection, maneuvering, and fueling/charging.

New truck operators may operate powered trucks in a training capacity:

- a. When they are under the direct supervision of persons who have the knowledge, training, and experience to train and evaluate their competence.
- b. Where such operation does not endanger themselves or others.

will ensure that all truck operators have a complete understanding of the below listed topics:

Truck-Related Topics:

- a. Operating instructions, warnings, and precautions for the type of truck the operator will be authorized to operate.
- b. Differences between the truck and the automobile.

- c. Truck controls and instrumentation: where they are located, what they do, and how they work.
- d. Engine or motor operation.
- e. Steering and maneuvering.
- f. Visibility (including restrictions due to loading).
- g. Fork and attachment adaptation, operation, and use limitations.
- h. Vehicle capacity.
- i. Vehicle stability.
- j. Any vehicle inspection and maintenance that the operator will be required to perform.
- k. Refueling and/or charging and recharging of batteries.
- l. Operating limitations.
- m. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Work-Related Topics:

- a. Surface conditions where the vehicle will be operated.
- b. Composition of loads to be carried and load stability.
- c. Load manipulation, stacking, and unstacking.
- d. Pedestrian traffic in areas where the vehicle will be operated.
- e. Narrow aisles and other restricted places where the vehicle will be operated.
- f. Hazardous (classified) locations where the vehicle will be operated.
- g. Ramps and other sloped surfaces that could affect the vehicle's stability.
- h. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.
- i. Other unique or potentially hazardous environmental conditions in the work area that could affect safe operation.

Refresher training in relevant topics will be provided to the operator when:

- a. If unsafe truck operations are observed.
- b. After an accident or near-accident.
- c. Operator has received an evaluation that reveals that the operator is not operating the truck safely
- d. If the operator is to be assigned to drive a different type of truck.
- e. If work area changes could affect safe operation of the truck.

An evaluation of each powered industrial truck operator's performance must be conducted at least once every three years and refresher training will be provided as needed.

Use of Forklifts to Support Scaffold Platforms

Per 29 CFR 1926.451(c)(2)(v), if deemed appropriate, forklifts may be used to support scaffold platforms with the following conditions:

- a. The forklift will be designed for such use as indicated either:
 1. In the owner's manual, or
 2. By a letter from the manufacturer allowing such use, or
 3. Certification by a registered engineer that the forklift is so designed.
- b. The entire scaffold platform is securely attached to the forks.
- c. The fork lift is not moved horizontally while the platform is occupied.
- d. The platform (and machine) meets the requirements of 29 CFR 1926.451 for capacity, construction, access, use, and fall protection.
 1. If the platform is not designed by the manufacturer of the forklift, it must be designed by a qualified person.
 2. The forklift must be capable of supporting, without failure, its own weight and at least four times the maximum intended load.
- e. The platform for elevating personnel must not extend more than 10 inches beyond the wheelbase of the machine in use.
- f. The employees on the platform must be able to have travel and power controls at the platform level.
 1. This requirement is fulfilled by having the forklift operator remain with the forklift while personnel are on the platform.
- g. The use of a forklift to support a scaffold platform will be used only after a determination that the use of other equipment such as scaffolds, scissor lifts, aerial lifts, and ladders is not practical.

Hazard Communication

29 CFR 1910.1200, Hazard Communication

29 CFR 1910.1200 Appendix A, Health Hazard Criteria (Mandatory)

29 CFR 1910.1200 Appendix B, Hazard Determination (Mandatory)

29 CFR 1910.1200 Appendix C, Allocation of Label Elements (Mandatory)

29 CFR 1910.1200 Appendix D, Safety Data Sheets (Mandatory)

29 CFR 1910.1200 Appendix E, Definition of "Trade Secret" (Mandatory)

Purpose

The purpose of this hazard communication program is to ensure that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to our employees.

The provisions of this hazard communication program are consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3. The transmittal of information is to be accomplished by means of our comprehensive hazard communication program.

We shall develop, implement, and maintain **at each workplace** a comprehensive written hazard communication program for the employees at KirbyCo Builders, which includes container labeling and other forms of warning, safety data sheets, and employee training.

Note: Where employees must travel between workplaces during a work shift, *i.e.*, their work is carried out at more than one geographical location, the safety data sheets may be kept at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

Hazard communication applies to any hazardous substance which is known to be present in the work place in such a manner that employees may be exposed under normal conditions of use or in a reasonably foreseeable emergency resulting from work place operations.

We will maintain a list of the hazardous substances known to be present using an identity that is referenced on the appropriate safety data sheet (SDS). This list may be compiled for the workplace as a whole or for individual work areas.

Manufacturers and importers shall obtain or develop a safety data sheet for each hazardous substance they produce or import. We will obtain from the manufacturer or seller an SDS of each hazardous substance which we use and maintain these SDS on the job site.

As a matter of course, before a new product is purchased, we will review its SDS to determine the presence of carcinogenic or other extremely hazardous chemicals. Using this information from the SDS, we will be able to inform employees how they will be protected from carcinogens at the workplace.

Prior to performing a non-routine task (for example, the cleaning of reactor vessels), an employee will be given information by a competent person or supervisor concerning the hazardous chemicals to which he may be exposed. This information will include:

- a. Specific chemical hazards
- b. Protective/safety measures the employee is to use.
- c. Measures taken to lessen the hazards including ventilation, respirators, presence of another employee and emergency procedures.

Should work activities be performed in areas where chemicals are transferred through unlabeled pipes, the employee shall be informed by the competent person or supervisor of:

- a. The chemical in the pipes.
- b. Viscosity, pressure, heat.
- c. Potential Hazards.
- d. Safety precautions to be taken.

In multi-employer workplaces, the written hazard communication program of KirbyCo Builders will include the methods we will use to inform any other employers sharing the same work area of the hazardous chemicals to which their employees may be exposed while performing their work, and any suggestions for appropriate protective measures, including the following:

The competent person on the job site will inform those with whom we work of any hazardous chemical products we are using and will provide them with the appropriate SDS for their review. SDS for all chemical products used on the job site will be readily available.

Should we introduce a new chemical product to the job site that contains a physical or health safety hazard, the product's SDS will accompany that product and, before use, employees will be given instruction on the products hazards. This information will be shared with other contractors with whom we may be working. Employees are to be kept informed of the chemical products being used by other contractors if they pose a safety hazard.

Safety data sheets shall also be made readily available, upon request, to designated representatives, the Assistant Secretary, and the Director, in accordance with the requirements of 29 CFR 1910.1020(e).

Labels and Other Forms of Warning

The manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Where the manufacturer or importer is required to label, tag or mark the following information shall be provided:

- a. Product identifier;
- b. Signal word;
- c. Hazard statement(s);
- d. Pictogram(s);
- e. Precautionary statement(s); and,
- f. Name, address, and telephone number of the manufacturer, importer, or other responsible party.

The manufacturer or importer preparing the safety data sheet shall ensure that the information provided accurately reflects the scientific evidence used in making the hazard determination. If the manufacturer or importer, become aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information shall be added to the safety data sheet within three months. If the chemical is not currently being produced or imported, the manufacturer or importer shall add the information to the safety data sheet before the chemical is introduced into the workplace again. We will replace safety data sheets with updated copies as they are received.

Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

Example below for labeling:

<p>HS85 Batch number: 85L6543</p> <p></p> <p>Warning Harmful if swallowed</p> <p>Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.</p> <p>First aid: If swallowed: Call a doctor if you feel unwell. Rinse mouth.</p> <p>GHS Example Company, 123 Global Circle, Anyville, NY 130XX</p> <p>Telephone (888) 888-8888</p>

We may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by the above to be on a label. The written materials shall be readily accessible to the employees at KirbyCo Builders in their work area throughout each work shift. We may use such written materials in lieu of affixing labels to individual containers as long as the alternative method identifies and accompanies the containers to which it is applicable and conveys the information required to be on a label.

We **are not required** to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

We shall not remove or intentionally deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

We shall ensure that workplace labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. If we have employees who speak languages other than English, we will add the information to the presented material translated to the appropriate language and the information will be presented in their language.

Note: OSHA pictograms do not replace the diamond shaped labels that the U.S. Department of Transportation (DOT) requires for the transport of chemicals, including chemical drums, chemical totes, tanks, or other containers. Those labels must be on the external part of a shipped container and meet the DOT requirements set forth in 49 CFR 172, Subpart E.

Employee Information and Training

We shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard is introduced into their work area. Information and training may relate to general classes of hazardous chemicals to the extent appropriate and related to reasonably foreseeable exposures of the job. Chemical-specific information must always be available through labels and safety data sheets.

Information and training shall consist of at least the following topics:

- a. Employees at KirbyCo Builders shall be informed of the requirements of 29 CFR 1910.1200, Hazard Communication, and its appendices.
- b. Employees at KirbyCo Builders shall be informed of any operations in their work area where hazardous chemicals are present.
- c. Employees at KirbyCo Builders shall be informed of the location and availability of the written hazard communication program, including the list(s) of hazardous chemicals and safety data sheets required by this section.
- d. Employees at KirbyCo Builders shall be trained in the methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as conducting specific monitoring, using continuous monitoring devices, learning the visual appearance or odor of hazardous chemicals when being released, etc.).
- e. Employees at KirbyCo Builders shall be trained in the physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area, and the measures they can take to protect themselves from these hazards, including specific procedures the we have implemented to protect our employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.
- f. Employees at KirbyCo Builders shall be trained in the details of our hazard communication program, including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer and the safety data sheet, and how our employees can obtain and use the appropriate hazard information.

Documentation of Training

Documentation of safety and health training shall be maintained for at least one (1) year.

Documentation shall include:

- a. employee name or other identifier
- b. training dates
- c. type(s) of training
- d. training providers

Employees will be informed employees of the right:

- a. To personally receive information regarding hazardous substances to which they may be exposed, according to the provisions of this section;
- b. For their physician or collective bargaining agent to receive information regarding hazardous substances to which the employee may be exposed according to provisions of this section;
- c. Against discharge or other discrimination due to the employee's exercise of the rights afforded pursuant to the provisions of the Hazardous Substances Information and Training Act.

Whenever we receive a new or revised safety data sheet, such information shall be provided to employees on a timely basis not to exceed 30 days after receipt, if the new information indicates significantly increased risks to, or measures necessary to protect, employee health as compared to those stated on a safety data sheet previously provided.

KirbyCo Builders

Request for Safety Data Sheets

TO:

(Date)

(Supplier)

(PO Box/Street Address)

(City, State, ZIP)

To whom it may concern:

On _____, we received a shipment of _____,
(Date) (Product Name)

reference invoice: _____.
(Invoice Number)

The above product was received without an accompanying Safety Data Sheet (SDS). Per 29 CFR 1910.1200, we are unable to use this product without its SDS.

Please furnish the appropriate SDS as soon as possible to:

KirbyCo Builders

9527 Hood Rd.
Jacksonville, FL 32257
904-281-5050

Thank you,

Chris Kirby

Safety Director

Personal Protective Equipment - General

29 CFR 1926.28 - Personal Protective Equipment

29 CFR 1926.52 - Occupational Noise Exposure

29 CFR 1926.95 - Criteria for Personal Protective Equipment

29 CFR 1926.100 - Head Protection

29 CFR 1926.101 - Hearing Protection

29 CFR 1926.102 - Eye and Face Protection

29 CFR 1926.107 - Definitions Applicable to this Subpart

29 CFR 1910.132 - General Requirements

29 CFR 1910.133 - Eye and Face Protection

29 CFR 1910.135 - Head Protection

29 CFR 1910.136 - Occupational Foot Protection

29 CFR 1910.138 - Hand Protection

Overview

This Personal Protective Equipment (PPE) Program has been prepared to inform all employees of KirbyCo Builders of the potential hazards on the job site and to identify the proper PPE to be used to reduce or eliminate these hazards. This Program relies on a cooperative effort by all personnel to understand the reasons for PPE and to protect themselves from harm.

The use of PPE does not lessen an employee's obligation to use safe work practices and procedures. Employees are expected to be aware of the hazards within their area of responsibility and properly use prescribed PPE.

Our operations, work methods, and individual job sites present specific hazards which must be identified, analyzed, and matched with the appropriate PPE through a continuing hazard assessment process.

A Certificate of Hazard Assessment will be kept on the job site for inspection purposes.

Duties of the PPE Program Administrator

The primary duties of , our Program Administrator include: hazard assessment; PPE selection; PPE training; and monitoring of our PPE Program. Certain types of PPE may require hands-on training before on the job use (primarily for sizing and fitting) and this training may be further delegated to competent persons.

Hazard Assessment and PPE Selection

A careful, systematic personal protective equipment selection process is used to identify what, if any, protection is required to reduce or eliminate the possibility of eye, hand, foot, limb, or head injury.

Hazard assessment, performed by or a designated competent person, starts with a thorough knowledge of the job sites, work procedures, and methods of operation as well as the hazards that may be created by other contractors working in the vicinity of our employees. The basic hazard categories are: impact, penetration, compression, chemical, heat, harmful dust, and light radiation.

Identifying the source of the above hazards allows for consideration of administrative or engineering controls to eliminate the hazard as opposed to providing protection against it. Examples would include: redirecting traffic flow, ventilation, temporary weather barriers, non-slip surfaces, etc.

Because administrative and engineering controls are passive – no employee involvement is required – they are preferable to PPE.

A PPE selection is made by analyzing the above information and evaluating the type of risk, the level of risk, the potential for injury and the possible seriousness of that injury. PPE, which is compatible with the above risks and work situation, is considered. Actual selection involves all the above factors plus an attempt to provide a level of protection greater than the minimum required.

In all situations where it has been determined that a particular type of PPE is to be used, it will be used. There will be no exceptions, by virtue of position or rank, to this policy. Within an area on a job site where the possibility of falling objects exists, hard hats will be worn. It follows that once an item of PPE (hard hat, in this case) is selected, it must be used by all persons in the identified area regardless of job title or function.

Having , or a designated competent person, on a job site to determine the PPE requirements allows for knowledgeable selection and consistency, and eliminates chaos that would result if each individual were to decide when, where, and if PPE should be used.

29 CFR 1910 Subpart I - Appendix B, *Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection*, provides excellent selection guidelines for eye and face protection, head protection, foot protection, and hand protection.

Dissemination of PPE Selection Information

Employees must understand when PPE is necessary and what type(s) of PPE are necessary.

All persons for whom PPE will provide a measure of safety will be given appropriate training on that item of PPE as well as an explanation of the importance of its use.

ANSI Standards and PPE

Most items of PPE are manufactured in accordance with a specific American National Standards Institute (ANSI) standard. For example, protective eye and face devices purchased after 07/05/94 must comply with ANSI standard ANSI Z87.1-1989, *American National Standard Practice for Occupational and Educational Eye and Face Protection*; protective helmets purchased after 07/05/94 must comply with ANSI standard ANSI Z89.1-1986, *American National Standard for Personnel Protection-Protective Headwear for Industrial Employees-Requirements*.

PPE safety products are tested to ensure they meet ANSI standards. Because products are tested in the manner in which they are designed to be used, ANSI certification is valid only if the user follows the manufacturer's instructions for proper sizing, fitting, wearing, and adjusting.

A review of OSHA citations reveals that fines can be levied because employees were improperly using PPE. For example, a hard hat worn with the bill toward the rear may provide adequate protection from impact; however, because it is tested with the bill toward the front, this improper use is cause for a safety violation.

PPE will be provided to our employees at no cost to them. Prior to purchase, items of selected PPE will be checked to ensure they were manufactured in accordance with the proper ANSI standard.

The importance of hazard assessment takes on added significance when judgments are made matching the hazard to the protection desired in cases where ANSI certification is not available. What matters most is: does the selected PPE do what it is intended to do?

Employee owned PPE must be approved for use by Chris Kirby. Further, such equipment must be properly maintained and cleaned in accordance with the manufacturer's instructions.

Sizing and Fitting

The word “personal” in the phrase “personal protective equipment” correctly implies that the equipment is for a specific person. As such, sizing and fitting are important for a variety of reasons.

Function: An improperly fitted piece of PPE may not do its job. For example, eye protection against dust must have an excellent face seal.

Comfort: The likelihood of continued use is increased if the PPE selected is comfortably fitted. Example: gloves that fit poorly and, over time, make a person’s hands hot and clammy are likely to be removed exposing that person to the hazard for which the gloves were required in the first place.

Safety: Ill-fitting PPE may actually cause an accident. Example: loose hard hat may slip and block one’s vision.

Most PPE comes in a variety of standard sizes like small, medium, & large, & within those sizes, small adjustments may be made to ensure a perfect fit. It is important to understand the procedures for donning, adjusting, using, & removing PPE. Each person who is required to use any type of PPE will be taught, before initial issue, the specific procedures for properly donning, adjusting, using, & removing the specific PPE. This instruction will generally be given by the employee’s Supervisor. When available, the manufacturer’s instructions will be issued with the PPE.

Care and Maintenance of PPE

PPE will be visually inspected before each use and if defects are noticed, it will not be used. Some types of PPE are expendable (cotton gloves) and have a limited life span after which they are discarded and new PPE is reissued. Plastic safety glasses become scratched and they too must be exchanged for new ones when vision is impaired. Other types of safety equipment consist of both non-expendable and expendable components. A cartridge respirator is an example of this, with the respirator being non-expendable while the cartridges “wear out” and become expendable (discarded and replaced). PPE will be maintained in accordance with the manufacturer’s instructions and, where appropriate, kept in a sanitary condition.

Cleanliness takes on an added importance when dealing with PPE designed to protect the eyes and face. Dirty or fogged lenses can impair vision and, rather than offer protection from a hazard, actually becomes a contributory factor in causing an accident.

Lastly, should PPE become contaminated with a chemical substance & decontamination is impossible, the PPE will be properly disposed of following the disposal instructions on the Safety Data Sheet for that substance.

Training

Most PPE requirements are obvious and wearing PPE is so simple that training is almost unnecessary.

What is important - vitally important - is actually using the proper PPE when it is required.

To ensure employee compliance with PPE requirements, we have opted to treat all employees as intelligent, responsible persons who, when reminded of what PPE actually protects, will enthusiastically endorse PPE use.

Affected employees will be given an understanding of:

- a. When PPE is necessary?
- b. What PPE is necessary?
- c. How to properly put on, take off, adjust, and wear PPE?
- d. The limitations of the PPE.
- e. The proper care, maintenance, useful life and disposal of the PPE.

Retraining will be given in situations when changes in PPE requirements render the previous training obsolete or it is noticed that an employee is not following our PPE policies – specifically, not properly wearing the selected PPE in identified locations or work situations.

Eye and Face Protection

Your eyes are a marvel of engineering. Most of us take them for granted as we do all our senses, until an accident, injury, or disease forces us to realize the miracle we lost or almost lost. Can you imagine a system that can take (absorb) light and convert it to electrical signals (by way of the 120 million rods and 6 million cones on the retina) and transfer these signals through an optic nerve which has about one million fibers directly into the brain?

Most of us see the world in living color and with depth perception. The body itself does much to protect the eyes. Bony eye sockets in the skull protect the eye from many mechanical injuries. Orbital fluids and tissues cushion direct blows. Eyelids close reflexively from visual or mechanical stimuli. Eyes reflexively rotate upward with the lid closing to protect the cornea. Tears can flush away chemicals and foreign bodies. We all come with these safeguards. Sometimes, they are not enough.

Eye protection is required when there is a possibility of eye injury. Eye injury is not confined to flying objects. Eye injury can be caused by bright light, dust, chemicals, heat, and, literally, anything that can reach them. Different hazards require different types of protection.

Eye (and face) protection is required when one is exposed to flying particles, chemicals, or injurious light radiation. Types of eye protection include: impact resistant safety glasses, safety glasses with side shields, goggles, goggles with a face seal, face masks, and shaded goggles with varying degrees of darkness.

Affected employees who wear prescription lenses will wear eye protection over the prescription lenses without disturbing the proper positioning of the prescription lenses, or will wear eye protection that incorporates their prescription into the design.

All prescription glasses should be made with impact-resistant lenses. Hardened lenses, through a tempering process, are extremely hard and resistant to impact and breakage. Safety lenses are similar to hardened lenses but are 1 mm thicker. Safety lenses are used in goggles where there is a danger of flying glass or chips of metal.

All employees who wear contact lenses must also wear appropriate eye and face protection in hazardous environments.

Welding helmets and face shields, if required, should be worn over primary eye protection (spectacles or goggles).

An inexpensive pair of safety glasses can save your priceless eyesight.

Head Protection

Talking about head protection is really talking about brain protection. Your brain, either through divine providence, evolution, or quirk of nature, is you. The brain, that soft mass of gray and white convoluted matter, is what you are all about. Destroy your brain and you no longer exist.

Your brain is naturally protected by a cranium. Your skull actually has many bones which protect your brain and support your face. Obviously, there are other parts to your head which need protecting such as your eyes, ears, nose, tongue, skin, etc., but your brain is the most important.

Head protection is required when there is a possibility of injury to the head from falling objects and when working near exposed electrical conductors which could contact the head.

Brain injury is the second most common cause of major neurologic deficits and causes more deaths than injury to any other organ.

When the skull receives an impact, it actually can indent and deform. A fracture may occur and the fracture may be distant from the point of impact. A direct blow to the head can cause the brain to actually move within the skull. Surprisingly, there is often a reverse correlation between skull damage and brain damage. Just because there is no external visible injury to the skull does not preclude the possibility of brain injury.

Wearing head protection (a hard hat) accomplishes two major objectives: it reduces the rate of energy transfer and spreads out the area of energy transfer. Just as your head should be checked out at a hospital after a head impact, so should your hard hat. A hard hat can absorb energy by destructing and this destruction may be unnoticeable.

A head injury may occur after a blow to the head and the following symptoms may be present: unconsciousness or disorientation, confusion, nausea, vomiting, and/or double vision. Get medical help immediately. Cover open wounds lightly with sterile dressing. Keep victim still, warm, and reassured. DO NOT move the victim unless he/she would be in greater danger if you did not. DO NOT apply pressure to a head wound. DO NOT try to stop blood or clear fluid coming from ears, nose, or mouth.

Hearing Protection

Wherever it is not feasible to reduce the noise levels or duration of exposures to those specified in Table D-2, below, ear protective devices shall be provided and used.

Ear protective devices inserted in the ear shall be fitted or determined individually by competent persons.

Plain cotton is not an acceptable protective device.

TABLE D-2 - PERMISSIBLE NOISE EXPOSURES	
Sound level	
<u>Duration per day, hours</u>	<u>dBA slow response</u>
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

Hearing damage is caused by noise level and duration of exposure to the noise. If, after using the formula below, the equivalent noise exposure exceeds unity (1), then a Hearing Conservation Program will be initiated.

$F(e) = (T(1) \text{ divided by } L(1)) + (T(2) \text{ divided by } L(2)) + \dots + (T(n) \text{ divided by } L(n))$ where:

$F(e)$ = The equivalent noise exposure factor.

T = The period of noise exposure at any essentially constant level.

L = The duration of the permissible noise exposure at the constant level (from Table D-2).

If the value of $F(e)$ exceeds unity (1) the exposure exceeds permissible levels.

A sample computation showing an application of the formula in paragraph (d)(2)(ii) of this section is as follows. An employee is exposed at these levels for these periods:

110 db A 1/4 hour.

100 db A 1/2 hour.

90 db A 1 1/2 hours.

$F(e) = (1/4 \text{ divided by } 1/2) + (1/2 \text{ divided by } 2) + (1 \text{ 1/2 divided by } 8)$

$F(e) = 0.500 + 0.25 + 0.188$

$F(e) = 0.938$

Since the value of $F(e)$ does not exceed unity, the exposure is within permissible limits.

Understanding some interesting facts about your hearing will emphasize the need for hearing protection.

Your outer ears on the side of your head are the least important part of your hearing system. Should you lose your ear, you would not necessarily lose your hearing. Your outer ear, made of cartilage, includes the external auditory canal which leads to the eardrum which is only 2/5" in diameter. The eardrum separates the outer ear from the middle ear. Within the middle ear are three (3) bones commonly called the hammer, anvil, and stirrup. The stirrup (stapes) is the smallest bone in your body -- thinner than a grain of rice. Also in the middle ear is the Eustachian tube which connects the middle ear to the back of the throat to maintain equal air pressure on both sides of the ear drum.

The inner ear, where sound waves are converted to electrical impulses, actually has a function unrelated to hearing. It contains the semicircular canals which completely control your balance. Also in the inner ear is the cochlea, a small spiral coil in which you would find the basilar membrane which has over 15,000 hair cells. These hair cells are the end of the auditory nerve which goes directly to the temporal lobe of the brain.

The hardest bone in your whole body is the temporal bone which protects two thirds of the auditory canal and all of the middle and inner ear. Nature, itself, seems to have placed a high priority on your hearing.

Protect your hearing. If you are issued hearing protection, use it!

Foot Protection

When purchasing new protective footwear, ensure that it complies with ANSI Z41-1991, "American National Standard for Personal Protection-Protective Footwear."

Specific hazards require specific types of protective footwear. Certain types of footwear can offer traction, crush protection, penetration protection, electrical protection, chemical resistance, heat and/or fire resistance, dryness, cushion, or ankle-protection. Further, certain activities may require a combination of these features.

Your foot is a remarkable piece of engineering which is composed of 26 bones, muscles, fatty tissue, nerves, tendons, skin and joints. The foot itself can absorb a tremendous amount of punishment without damage. But there are limits and it would be a shame to lose a foot, or part of a foot, because of failure to wear the prescribed protective footwear.

Hand Protection

Your hand is composed of 20 muscles, 3 major nerves, 27 bones (14 of which are in your fingers) plus skin, fatty tissue, tendons, and joints. There are 15 muscles in your forearm which provide power to your hand. Your hand is your gateway to the world. It lets you do what you think. Its function is feeling and grasping.

Try to pick up something while holding your thumb still. It is very difficult. If the nerve to the small muscles of the thumb is severed, 80% of the total hand function is lost.

There are numerous types of hand protection (gloves) available -- each with a specific purpose. The most common are general purpose cotton work gloves which provide protection from minor skin abrasions and cold. However, there are many other types of gloves. Hands need protection from chemicals, abrasions, cuts and lacerations, temperature extremes, germs, radiation, impact, punctures, electricity, and other hazards on the job site. Specific job requirements determine the type of hand protection needed. Proper hand protection must do more than protect your hand; it must allow you to accomplish your job assignment with efficiency as well as safety.

Wearing hand protection could prevent your hand and/or fingers from being severed, burned, crushed, punctured, lacerated, cut, or generally abused.

Respiratory Protection

Employees who, by nature of their work, are exposed to harmful aerosols, vapors, gases, contaminated air, or non-breathable air will be provided air purifying or air supplying respirators after training, medical evaluation, and fit testing per our Respiratory Protection Program. The one exception is dust masks worn solely for comfort and not for respiratory protection.

Miscellaneous Personal Protection

PPE immediately brings to mind eye, head, hand, and foot protective equipment. However, there may be other types of protective equipment which are readily available and which have the capability of protecting employees from identified hazards on the job site. Some of these items may not fall under a specific OSHA standard or may not be ANSI approved or disapproved; however, in the judgment of , they may be appropriate for use in our operations.

Summary

The true beneficiary of PPE utilization is the user. The whole thrust of this Program is to protect the employees of KirbyCo Builders from injury. This is accomplished by, among other things, explaining the process of hazard assessment, the reasons for PPE use, and the necessity of using the PPE selected.

What possible justification could there be for maiming, losing, or even slightly injuring a body part because available (and required) PPE was not used? “I forgot”; “I was in a hurry”; “I misplaced my PPE”; “I felt silly wearing PPE”; or “I really didn’t believe PPE was necessary” will not undo what could be a lifetime of regret.

KirbyCo Builders

Certificate of Job Site Hazard Assessment

I certify, this date, that I have performed a hazard assessment of the job site for KirbyCo Builders and our methods of operations.

This hazard assessment was accomplished to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE).

Identified hazards which cannot be eliminated through engineering controls or changes in procedures will be addressed by the use of selected PPE.

All affected employees will be informed of the required PPE for specific work locations or specific types of work to be performed and will receive initial training or retraining, if necessary, before being allowed to perform work requiring PPE.

If conditions or procedures change, a reassessment will be made.

Chris Kirby

Date

Personal Protective Equipment Program Administrator

Personal Protective Equipment - Hearing Conservation Overview

29 CFR 1910.95 – Occupational Noise Exposure

29 CFR 1926.52 - Occupational Noise Exposure

29 CFR 1926.101 - Hearing Protection

Overview

Wherever it is not feasible to reduce the noise levels or duration of exposures to those specified in Table D-2, below, ear protective devices shall be provided and used.

Ear protective devices inserted in the ear shall be fitted or determined individually by competent persons.

Plain cotton is not an acceptable protective device.

Table D-2 - Permissible Noise Exposures	
<u>Sound Level</u>	<u>Duration Hours/Day</u>
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

Hearing damage is caused by noise level and duration of exposure to the noise. If, after using the formula below, the equivalent noise exposure exceeds unity (1), then a Hearing Conservation Program will be initiated.

$F(e) = (T(1) \text{ divided by } L(1)) + (T(2) \text{ divided by } L(2)) + \dots + (T(n) \text{ divided by } L(n))$ where:

F(e) = The equivalent noise exposure factor.

T = The period of noise exposure at any essentially constant level.

L = The duration of the permissible noise exposure at the constant level
(from Table D-2).

If the value of F(e) exceeds unity (1) the exposure exceeds permissible levels.

A sample computation showing an application of the formula in paragraph (d)(2)(ii) of this section is as follows. An employee is exposed at these levels for these periods:

110 db A 1/4 hour.

100 db A 1/2 hour.

90 db A 1 1/2 hours.

$F(e) = (1/4 \text{ divided by } 1/2) + (1/2 \text{ divided by } 2) + (1 1/2 \text{ divided by } 8)$

$F(e) = 0.500 + 0.25 + 0.188$

$F(e) = 0.938$

Since the value of F(e) does not exceed unity, the exposure is within permissible limits.

Hearing protection is different from most other types of PPE because loss of hearing generally occurs painlessly over a period of time and, when finally realized, the damage is permanent.

As one would reasonably expect, acoustic trauma to your hearing can cause instant and permanent damage.

The initial determination of excessive noise levels is generally subjective. Indications of excessive noise would include: actual information pertaining to specific machines, personal observation, complaints from employees, and noticed indications of hearing loss. It is requested that employees draw attention to work situations where there is an apparent loudness that possibly requires hearing protection.

The noise levels on the job sites have been determined to be within acceptable levels.

At no cost, and replaced as necessary, hearing protectors will be provided as needed.

Appropriate hearing protectors will be available in a variety of styles from which to choose from to provide a comfortable fit; employees will be made aware of the proper use and care of the protectors selected.

In selecting appropriate hearing protectors, , our Hearing Program Administrator will consider the below factors:

- a. The hearing protector's noise reduction rating (Subject Fit) [NRR(SF)].
- b. The user's daily equivalent noise exposure.
- c. Variations in noise levels.
- d. User preference.
- e. Communication needs.
- f. Hearing ability.
- g. Compatibility with other safety equipment.
- h. User's physical limitations.
- i. Climate and other working conditions.
- j. Replacement, care, and use requirements.

Prevention of Heat and Cold Stress

Prevention of Cold Stress

Cold related work illness is a real threat to employees at KirbyCo Builders who work outside during months of cold weather. In order to lessen this threat, this program has been prepared.

All current employees will be given instruction in this program prior to working outside where the possibility of frostbite and hypothermia exist.

On days when applicable environmental conditions exist (**temperatures or wind chill factors equal to or less than 30 degrees F**), the site supervisor will, before the morning shift starts, remind workers of the danger of frostbite and hypothermia, the procedures to lessen its impact, and, in the worst case, the procedure for medical response.

All persons should recognize the symptoms of cold related illness.

FROSTBITE

Sensations of coldness; tingling, stinging or aching feeling of the exposed area followed by numbness of ears, fingers, toes, cheeks, and noses. Frostbitten areas appear white and cold to the touch.

Seek medical assistance immediately.

Frostbitten parts should be covered with dry, sterile gauze or soft, clean cloth bandages.

Do not massage frostbitten tissue.

Take measures to prevent further cold injury.

GENERAL HYPOTHERMIA

Shivering, an inability to do complex motor functions, lethargy, and mild confusion.

Conserving remaining body heat.

Providing additional heat sources.

Seek medical assistance for persons.

SEVERE HYPOTHERMIA

Unresponsive and not shivering.

Seek medical attention immediately.

Reduce heat loss by:

- a. Obtaining shelter.
- b. Removal of wet clothing.
- c. Adding layers of dry clothing, blankets, or using a pre-warmed sleeping bag.

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds, dampness and cold water. Wind chill, a combination of temperature and velocity, is a crucial factor to evaluate when working outside. For example, when the actual air temperature of the wind is 40°F (4°C) and its velocity is 35 mph, the exposed skin receives conditions equivalent to the still-air temperature being 11°F. A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

The purpose of this program is to take definitive measures prior to the onset of cold related illnesses so that medical response will not be necessary. If the above conditions do present themselves, the supervisor, who will always have access to a mobile phone, will follow our standard emergency procedures.

Definitive measures to prevent cold related illness include:

- a. Personal protective clothing is the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing:
 1. An outer layer to break the wind and allow some ventilation (like Gore-Tex® or nylon);
 2. A middle layer of wool or synthetic fabric (Quallofil or Pile) to absorb sweat and retain insulation in a damp environment. Down is a useful lightweight insulator; however, it is ineffective once it becomes wet.
 3. An inner layer of cotton or synthetic weave to allow ventilation.

Pay special attention to protecting feet, hands, face, and head. Up to 40% of body heat can be lost when the head is exposed. Footgear should be insulated to protect against cold and dampness. Keep a change of clothing available in case work garments become wet.

- b. Engineering controls help reduce the risk of cold-related injuries.
 - 1. Use an on-site source of heat, such as air jets, radiant heaters, or contact warm plates.
 - 2. Shield work areas from drafty or windy conditions.
 - 3. Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20° F or less.
 - 4. Use thermal insulating material on equipment handles when temperatures drop below 30° F.
- c. Safe work practices, such as changes in work schedules and practices, are necessary to combat the effects of exceedingly cold weather. Possible workable safe practices include:
 - 1. Allowing a period of adjustment to the cold before embarking on a full work schedule.
 - 2. Permitting employees to set their own pace and take extra work breaks when needed.
 - 3. Reducing, as much as possible, the number of activities performed outdoors. When employees must brave the cold, select the warmest hours of the day and minimize activities that reduce circulation.
 - 4. Ensuring that employees remain hydrated.
 - 5. Establishing a buddy system for working outdoors.
 - 6. Educating employees to the symptoms of cold-related stresses - heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, or euphoria.

Provision of Water

Employees will have access to adequate quantities of potable drinking water.

Where the supply of water is not plumbed or otherwise continuously supplied, water will be provided in sufficient quantity.

Supervisor will provide frequent reminders to employees to drink frequently, and, if needed, more water breaks will be provided.

Drinking water will be dispensed in containers with a tight sealing lid and labeled as Drinking Water. Drinking water containers are to be cleaned daily. Water containers will be placed as close as possible to the workers.

Supervisors will monitor water consumption and water supply and ensure adequate levels are available to last the whole shift.

Disposable/single use drinking cups will be provided to employees.

Supervisors will remind employees that personal military style canteens may be worn containing water. In cold weather conditions, employees are encouraged to drink warm, sweet beverages (sugar water, sports-type drinks). They should avoid drinks with caffeine (coffee, tea, or hot chocolate). Employees are cautioned, however, that sharing water from a personal canteen is forbidden and, because of the health hazard to the user and the person with whom it is shared, disciplinary action will be taken against both employees if they drink out of the same container. This disciplinary action will be documented using our disciplinary enforcement form.

Training

All employees will read this program and be given interactive training in its provisions. A copy of this program will be kept at the work area during applicable periods of cold weather.

All supervisors will read the below informational items prior to utilization of this program and have an opportunity for discussion and clarification with Chris Kirby, our Safety Director.

OSHA Cold Stress QuickCard 3156

Prevention of Heat Stress

Heat related work illness is a real threat to employees at KirbyCo Builders who work outside during months of high heat and humidity. In order to lessen this threat, this program has been prepared.

All current employees will be given instruction on this program prior to working in heat illness inducing environments or other severe environmental conditions.

On days when applicable environmental conditions exist - periods of hot weather (equal to or greater than 85°F and 40% Relative Humidity) -the site supervisor will, before the morning shift starts, remind workers of the danger of heat illness, the procedures to lessen its impact, and, in the worst case, the procedure for medical response.

All persons should recognize the symptoms of heat related illness.

HEAT EXHAUSTION

Fatigue; weakness; profuse sweating; normal temperature; pale clammy skin; headache; cramps; vomiting; fainting

Remove from hot area.

Have victim lie down and raise feet.

Apply cool wet cloths.

Loosen or remove clothing.

Allow small sips of water if victim is not vomiting.

HEAT STROKE

Dizziness; nausea; severe headache; hot dry skin; confusion; collapse; delirium; coma and death

Call for immediate medical assistance.

Remove victim from hot area.

Remove clothing.

Have victim lay down.

Cool the body (shower, cool wet cloths)

Do not give stimulants.

The purpose of this program is to take definitive measures prior to the onset of heat exhaustion and heat stroke so that medical response will not be necessary. If the above conditions do present themselves, the supervisor, who will always have access to a mobile phone, will follow our standard emergency procedures.

Definitive measures to prevent heat related illness include:

1. Provision of water
2. Provision of shade
3. Provision of rest (recovery period)
4. Modified work procedures

Provision of Water

Water is a key preventive measure to minimize the risk of heat related illnesses. Employees will have access to adequate quantities of potable drinking water.

Where the supply of water is not plumbed or otherwise continuously supplied, water will be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift.

Supervisors will encourage the frequent drinking of water. The supervisor or a designated person will monitor water consumption every 30 minutes. Employees are encouraged to report bad tasting water or low levels of water immediately so the situation can be corrected.

Supervisor will provide frequent reminders to employees to drink water, and, if needed, more water breaks will be provided.

Every morning during conditions where this program is applicable, there will be short tailgate meetings to remind workers about the importance of frequent consumption of water throughout the shift.

Drinking water will be dispensed in containers with a tight sealing lid and labeled as Drinking Water. Drinking water containers are to be cleaned daily. Water containers will be placed as close as possible to the workers.

Supervisors will monitor water consumption and water supply and ensure adequate levels are available to last the whole shift

Disposable/single use drinking cups will be provided to employees

During extreme conditions, the supervisor will blow an air horn to remind workers to take a water break.

Supervisors will remind employees that personal military style canteens may be worn containing water. Employees are cautioned, however, that sharing water from a personal canteen is forbidden and, because of the health hazard to the user and the person with whom it is shared, disciplinary action will be taken against both employees if they drink out of the same container. This disciplinary action will be documented using our disciplinary enforcement form.

As a reminder of the importance of water to the human system, the following information is supplied:

Fluids

If you heard in advance that this safety meeting was on fluids, you may well have thought that the meeting would focus on the storage, use, clean-up, and possible emergency procedures involved with the liquid chemical products used on or near work areas. You'd be wrong. While the above are important topics and questions related to them should be addressed to the competent person, this safety meeting is about **your** bodily fluids.

From a safety standpoint, you must not neglect your need for potable (drinkable) fluids. Water is not only the most abundant of all compounds found on the earth, it is the most abundant part of you – actually about 65% of you is water.

Drink fluids! From a life process standpoint, what fluid intake is doing is keeping you healthy by allowing your body to maintain its core body temperature at its appropriate level. When your brain senses that cooling action is needed, your body circulates blood to your skin to allow it to cool with the outside temperature. If the water used for sweat is not replaced, a water deficit starts to occur. The millions of chemical reactions taking place in your body at every moment can only occur in the presence of water. The fluids in your body transport nourishment, gases, and waste.

Imagine your body as a water based chemical factory that functions only within a narrow temperature range. An average, healthy person, at rest, has an oral temperature of between 98.6° F and 100.4° F. If your body temperature reaches 105.8° F, convulsions may occur. Your whole central nervous system is impaired when your body temperature raises 9° F above normal. At 106.0° F, the thermoregulatory center in your brain fails and, because of damage to your central nervous system, the sweating (cooling) mechanism cuts off when you need it most. It is a vicious circle, the hotter you get, the more heat you generate through metabolism. In fact, at 107.6° F, cellular metabolism is 50% higher than at normal temperatures.

Without getting too graphic, here are some of the problems associated with extreme water loss: cells will shrink; the skin will lose its elasticity; skin and mucous membrane cells will dry out;

eyeballs will become soft; weight loss will occur; the body temperature will rise; apprehension, restlessness, and even coma may occur; urine will become concentrated; renal shutdown will occur; red blood cells will shrink; **death.**

Stay healthy! Drink water! Water is truly the stuff of life.

Provision of Shade

The supervisor will ensure that employees have access to shade to minimize the risk of heat related illnesses. If natural shade is not available, the supervisor will ensure that sun umbrellas or portable canopies are provided in adequate number. These umbrellas or canopies will be placed in close proximity to the work activity (i.e., no more than 50-100 yards).

Ideally, if available, employees will be allowed to get out of the sun by entering an air conditioned structure such as a building or job trailer. This not only provides shade, it provides a cool, less humid, atmosphere. Any employee who feels the need for shade will protect himself/herself from the sun for a period of not less than 5 minutes.

Lastly, but importantly, persons must provide personal shade in the form of shirts (preferably light colored to reflect the sun). Shirts are required to prevent sunburn, another health hazard.

Provision of Rest (Recovery Period)

While shade and rest often go hand in hand, they are two distinct activities. Any employee who, due to heat, humidity, or exertion under the provisions of this program, may rest for a period of not less than 5 minutes if that employee believes a preventative recovery period is required.

Modified work procedures

The supervisor will make every effort, consistent with our effort to properly perform our job tasks, to modify work procedures. A few examples would include performing work requiring heavy exertion during the cooler hours of the day, assigning more persons to a job task to lessen the effort required of each, and the use of machinery in lieu of physical effort.

All employees, but new employees in particular, should be allowed to acclimate to hotter weather. It takes a body four to fourteen days to acclimate to hotter weather. Reduced workloads and careful attention to new employees may be required.

Training

All employees will read this program and be given interactive training in its provisions. A copy of this program will be kept at the work area during applicable periods of heat and humidity.

All supervisors may wish to read the below informational items prior to utilization of this program and have an opportunity for discussion and clarification with Chris Kirby, our Safety Director.

The American Red Cross Health & Safety Tips, Heat Related Illness
CAL OSHA Heat Illness Prevention etool