NEWKIRK NOVAK CONSTRUCTION PARTNERS

SAFETY MANUAL

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Updated: 06/23

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NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 100 **Next Scheduled Review: 05/2024**
Implementation Date: 09/2020 **Revision Date:**

Title
Policy Statement

Purpose
To establish guidelines, integrate and ensure safety and health practices within company operations and to optimize safety and health for employees in accordance with the Occupational Safety and Health Administration's standards.

Scope
Applies to all employees

Responsibilities
See *Procedure* section for Responsibilities

Special Definitions

Procedure
1.0 Newkirk Novak recognizes the importance of a healthy and accident free jobsite to making life more rewarding. We're committed to providing a healthy and accident free jobsite/ where hazards are controlled and positive safety attitudes and behaviors are promoted.

2.0 The philosophy and objectives behind this commitment are:
- **2.1** The safety and health of all employees is our first priority.
- **2.2** The only acceptable level of safety and health performance is one that prevents all injuries and accidents.
- **2.3** Safety and health are integral parts of production and all other business functions.

3.0 We recognize that the responsibility for safety and health are shared.
- **3.1** The employer accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe conditions.
- **3.2** Supervisors are responsible for developing the proper attitude toward safety and health in them and in those they supervise. They are also responsible for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves.
- **3.3** Employees are responsible for wholehearted, genuine cooperation with all aspects of the safety and health program, including compliance with all rules and regulations and for continuously practicing safety while performing their duties.

TO: ALL PERSONNEL

SUBJECT: SAFETY DIRECTOR

Summit Safety Group has joined our company as Safety Director. It is expected that they will organize and direct the company's safety program.

Should you at any time have a concern about safety in the workplace, talk to someone within the company so that we can take corrective action.

If you do not feel comfortable talking within the company, you may contact Summit Safety Group during their visits or call them at their office at 417-823-7233 or at 417-343-3200, at any time to discuss any concern you might have for your safety. Any conversation you might have with them will be confidential. They will answer your concerns directly, thereby ensuring employee privacy.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 101 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Compliance Officer

Purpose
Guidelines to follow if an OSHA Compliance Officer arrives at the jobsite

Scope
Any employee greeting visitors to the jobsite

Responsibilities

Special Definitions

Procedure
1.0 Take the following actions if an OSHA Compliance Officer arrives at the jobsite:

- **1.1** Notify the Company President.
- **1.2** Ask the Compliance Officer why he/she is at this site. If he/she mentions a complaint, ask for a copy of the complaint.
- **1.3** Advise the OSHA Compliance Officer that the Safety Director is off the site at this time and would he/she please await his arrival. Give him/her the same respect and courtesy you would give any other visitor to your site.
- **1.4** If the Compliance Officer asks for any records and information, advise him/her that the Safety Director maintains those records and will be made available to him/her when the Safety Director arrives.
- **1.5** Call Summit Safety Group, at 417-343-3200, or 417-823-7233, or 417-766-1650 and advise him of the OSHA Compliance Officer's presence. They will immediately proceed to the site and take charge of the inspection.

2.0 Do not allow the OSHA Compliance Officer to enter the rest of the grounds until the Safety Director, or a member of top management, arrives and takes charge.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 090 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Accident and Injury Prevention

Purpose
At Newkirk Novak the safety of our employees is of the utmost consideration. Accidents and injuries are costly to the company, individuals, and families. We endeavor to provide a workplace free of recognized safety and health hazards for our employees. We take every reasonable measure to maintain the highest possible standards. We endeavor to return any injured employee at the earliest possible opportunity recognizing the "light duty" requirements. We also expect/require our employees to assume their responsibilities by cooperation and support as may be required toward this end. This document outlines our specific steps toward accident and injury prevention.

Scope
The program applies to all employees and management.

Special Definitions

Procedure
1.0 CORPORATE RESPONSIBILITY

1.1 Newkirk Novak 's upper management is responsible for the development, implementation and maintenance of the health and safety program. This includes the assignment of specific safety responsibilities and accountability procedures, and commitment of necessary resources. Also included is a commitment to investigate each and every accident/incident/illness and analysis necessary for preventative measures.

2.0 BASIC MANAGEMENT PHILOSOPHY

2.1 Maintenance of safe and healthful working conditions throughout our facility is a priority at all times.
2.2 Employees are required to adhere to accepted safe operation practices and procedures which are designed to prevent accidents, illnesses, and injuries.
2.3 Observation and compliance with all Federal, State and local safety rules and regulations is a priority.
2.4 Training each employee in job safety procedures is required.
2.5 Conducting periodic safety and fire inspections to monitor conditions and identify workplace safety hazards will be completed.
2.6 Conduct accident and near miss investigations for cause determinations and course of action necessary for prevention of future like accidents/incidents.

2.7 At Newkirk Novak, we recognize that workplace safety is our responsibility and to further this goal, we have implemented, maintained and are enforcing, all required safety and health policies and procedures. Our efforts shall concentrate on employee education, safety and health practices, workplace safety monitoring and periodic inspections, and a participative safety committee.

2.8 Managers are responsible for overall safety. They closely and consistently monitor the safety performance of their subordinates ensuring safe practices are adhered to. In the event of an incident/accident or illness they focus on the injured employee and insure appropriate medical attention is obtained. They will complete an accident report, which will be completed and provided to the Operations Manager. They will arrange for the correction of unsafe work conditions or hazards brought to their attention.

3.0 EMPLOYEE RESPONSIBILITY

3.1 Employees are responsible for their individual safety. They are responsible for closely complying with all safety regulations, company safety policies and procedures, following specific safe job procedures, and notification of their Supervisor in the event of an incident/accident or injury. They shall immediately report any unsafe work conditions and/or hazards they encounter and/or create.

4.0 COMPANY SAFETY RULES AND STANDARD PROCEDURES

4.1 At Newkirk Novak, each employee is part of the Safety Team. Coworkers depend upon each member to safely and correctly perform their assigned duties. Keys to preventing accidents are following all safety rules and procedures; proper use of all machinery and equipment; use of required personal protective equipment. The following rules are provided to help employees perform their jobs safely and correctly.

4.2 These rules apply throughout the company, although some areas, because of their specialized work, may have special additional rules. Employees are required to read all safety rules, to know and follow them. A copy of the safety rules will be given to each employee and will be posted on the company bulletin board. New employees receive these rules upon hire.

4.3 Employees are asked to sign an acknowledgement form, which states that they have read the safety rules, understand and will comply with them. This form will be kept with the employees personnel file. Violations of safety rules or safety instructions may be followed by disciplinary action even though the particular violation did not result in an accident. These rules may not be completely detailed or all-inclusive; therefore, whenever unique or unusual problems arise or more specific information is necessary employees are to contact their supervisor.

4.4 All employees will:

- **4.4.1** Observe all company safety and health rules and apply the principles of accident prevention to all day-to-day activities.
- **4.4.2** Not engage in horseplay, throwing objects, scuffling, fooling around and/or distracting others in ways that may lead to injuries.
- **4.4.3** Obey all posted rules, warning signs and no smoking areas.
- **4.4.4** Read all bulletins.
- **4.4.5** Walk at all times on company premises (absolutely no running) and take no unauthorized shortcuts.

4.4.6 Not report to work under the influence of alcoholic beverages or drugs of any kind nor shall any employee consume, purchase or possess these items while on company premises.

4.4.7 Never climb upon, through, under or around racking, pallets, trucks, equipment, forklifts or other obstructions.

4.4.8 Not attempt to lift or push objects that may be too heavy. Ask for help when needed. Learn to use correct lifting techniques to avoid strains: i.e.; Bent knees, keeping upper body erect, lifting with legs and not back.

4.4.9 Encourage fellow employees to work safely and warn workers who are working carelessly.

4.4.10 Remove jewelry, rings, bracelets and chains as these items may get caught in machinery and/or cause accidents.

4.4.11 Always use appropriate personal protective equipment for each assigned job. This includes eye protection, hand protection, head protection, foot protection, and fall protection.

4.4.12 Report hazards or safety concerns to your supervisor immediately.

4.4.13 Never wear frayed or loose clothing or unrestrained hair in areas where it may get caught in machinery. Employees with long hair must wear it up. Long hair and/or ponytails are not allowed around machinery.

4.4.14 Inspect each ladder before use to make sure they are free of defects, broken rungs and have solid feet

4.4.15 Never use makeshift ladders, scaffolding or climb on boxes or other makeshift devices.

4.4.16 Never tamper with electrical devices, switches, cords, circuits, or equipment unless authorized.

4.4.17 Use lockout/tagout procedures when required. Always shut down machinery before cleaning, adjusting or repairing.

4.4.18 Never oil/grease machines while they are in motion.

4.4.19 Never use hands to remove obstructions from equipment unless equipment is shut off and locked/tagged out.

4.4.20 Never use hand tools that are defective/damaged/broken.

4.4.21 Do not operate machinery/equipment unless properly trained and authorized to do so. Observe safe operating procedures for all equipment and processes.

4.4.22 Follow safe procedures and use all safety devices and equipment. Guards will never be removed except when necessary to repair and/or adjust. Immediately replace guarding as machines and/or equipment are never to be operated unless they are installed and fully functional.

4.4.23 Machinery/Equipment shall never be altered without management permission.

4.4.24 Always wear appropriate eyewear, head protection, and footwear as may be required by their job assignment.

4.4.25 Housekeeping is mandatory. Each employee will maintain his or her work area clean and uncluttered. Oily rags and wet materials must be placed appropriately.

4.4.26 Doors, aisles, electrical control switches, fire extinguishers, eye washes, first aid kits, emergency equipment and exits must be kept open and clear.

4.4.27 Learn the location of firefighting equipment, safety exits, and evacuation procedures at the job site.

4.4.28 Use seat belts when on Company business in any vehicles
4.4.29 Firearms, weapons, or explosives are not permitted on Company Property
4.4.30 Only qualified and trained Employees may work on or near Exposed Energized Electrical Parts or Electrical Equipment. Follow Electrical Safety Rules when working with electrically powered machinery and equipment.
4.4.31 Only authorized and trained Employees may enter a posted Confined Space. All confined spaces will be posted *Confined Space - Permit Required*. Entry is allowed only after permits are properly issued.
4.4.32 Only authorized and trained Employees may dispense or use chemicals. It is your responsibility to know where SDS's are located and that they are available for your use and review.
4.4.33 Report all accidents, near misses, and injuries to their supervisor immediately.
4.4.34 Always determine the proper and safe way to perform a task.
4.4.35 Actively support and participate in the company's efforts to provide a workplace accident and injury reduction program.

5.0 ENFORCEMENT

5.1 The following procedures will be followed in dealing with safety infractions:
5.1.1 Employee observed by their Supervisor committing an unsafe act, violation of safety rules or causing an unsafe condition to exist will be stopped immediately and questioned for reasoning. The consequence will be determined. Instruction in the safe procedure will be given.
5.2 When this instruction is given the following will be completed:
5.2.1 Tell the employee what is to be done.
5.2.2 Show the employee what is to be done.
5.2.3 Test the employee, let the employee practice, the employee will be observed and suggestions for improvements will be given as needed.
5.2.4 Check the employee by following up after the employee has returned to work to see that the safety rules are being followed.
5.2.5 Unsafe conditions will be corrected at once. If unable to do so, all employees involved will be warned of the hazard. Prompt notification of those responsible for making the correction will be made.

6.0 DISCIPLINARY PLAN

Refer to SOP 135 – Disciplinary Process

ACKNOWLEDGMENT OF COMPANY SAFETY RULES

Employee Name_____

I have read the safety rules, understand and will comply with them. I understand that violations of safety rules or safety instructions may be followed by disciplinary action even though the particular violation did not result in an accident.

_____ _____

Signature of Employee Date

GENERAL SAFETY RULES

THINK SAFE, WORK SAFE, AND BE SAFE

1. Report all work injuries and illnesses immediately

2. Report all Unsafe Acts or Unsafe Conditions to your Supervisor

3. Use seat belts when on Company business in any vehicles

4. Firearms, weapons, or explosives are not permitted on Company Property.

5. Use, possession, sale or being under the influence of illegal drugs, misuse of prescription drugs and/or alcohol is not permitted on Company Property or while "on duty".

6. Only authorized and trained Employees may repair or adjust machinery and equipment. Lock and Tag Out Procedures must be followed before removing any machine guards or working on powered machinery and equipment. Replace all guards when the job is completed.

7. Only qualified and trained Employees may work on or near Exposed Energized Electrical Parts or Electrical Equipment. Follow Electrical Safety Rules when working with electrically powered machinery and equipment.

8. Only authorized and trained Employees may enter a posted Confined Space. All confined spaces will be posted *Confined Space - Permit Required*. Entry is allowed only after permits are properly issued.

9. Only authorized and trained Employees may dispense or use chemicals. It is your responsibility to know where SDS's are located and that they are available for your use and review.

10. Keep work areas clean and aisles clear. Do not block emergency equipment of exits.

11. Wear and use the prescribed Personal Protective Safety Equipment. This includes hard hat, safety glasses, hi visibility shirt, boots.

18. Smoking is permitted only in the designated "Smoking Areas".

Failure to follow the above rules may cause serious injury and/or illness. Disciplinary Action, up to and including Termination, will be used to assure rule enforcement. Please use common sense and think before you act. If you are not sure how to complete a job or task safely or have any questions, ask your supervisor.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 120 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Accident/Near Miss Investigation

Purpose
To establish procedures to properly conduct accident investigations in order to take corrective action

Scope
This document applies to all personnel.

Responsibilities
It is the responsibility of every employee to report an unsafe condition, near miss, or incident to initiate an investigation. It is the responsibility of the Superintendent/Operations Manager to ensure the investigation forms are complete.

Special Definitions

Procedure

1.0 Accidents should be investigated as soon after the occurrence as possible in order to determine the causes (unsafe conditions and unsafe actions) and to initiate necessary corrective action.

2.0 Accident reports are to be filled out immediately after the occurrence of an accident resulting in injury or property damage. Copies of these forms are presented on the following pages. When completing the forms, obtain as many details as possible and then compare all the facts to obtain the correct version of how and why the accident occurred. Then promptly take the necessary action to prevent a similar accident from happening again. That action is to be documented.

3.0 Additional accident recordkeeping and reporting requirements are as follows:

3.1 A log and summary (OSHA Form No. 300 or equivalent) of all recordable injuries and illnesses (resulting in a fatality, hospitalization, lost workdays, medical treatment, job transfer or termination, or loss of consciousness) shall be maintained for that establishment. Each recordable event shall be entered on the log no later than six working days after receiving the information. When the complete log and summary records are maintained at a place other than the establishment, a copy of the log shall be available of the experience at that establishment. The copy of the log must be complete and current to a date within 45 calendar days.

3.2 In addition to the log of occupational injuries and illnesses, a supplementary record (OSHA Form No. 301 or equivalent) for each recordable occupational injury or illness for that establishment shall be maintained.

3.3 An annual summary of occupational injuries and illnesses for each establishment shall be posted, compiled from the collected Form 300's and including the year's totals, calendar year covered, company name, establishment name and address, certification signature, title, and date. A form OSHA No. 300A shall be used in presenting the summary. The summary shall be posted in a conspicuous location within your establishment from February 1 – April 30.

3.4 The log and summary, the supplementary record, and the annual summary shall be retained in each establishment for 5 years following the end of the year to which they relate. Records shall be made available, as authorized, upon request.

3.5 Within 8 hours after any work related fatality the employer must report by phone to the nearest OSHA Area Director during normal business hours or by calling the 24-hour OSHA hotline at 1-800-321-6742. Any work related inpatient hospitalization, amputation, or eye loss must be reported within 24 hours of learning about it to the nearest OSHA Area Director during normal business hours.

3.6 As of January 1, 2017, the new recordkeeping rules require establishments with 20-249 employees to electronically file their OSHA 300A logs. For reporting years 2017 and 2018 this must be submitted by July 1. Beginning in 2019, this submission deadline is March 2nd and on this date every year thereafter.

3.7 Establishments with 250 or more employees must electronically file their OSHA 300A logs by July 1, 2017 and must submit all forms (300A, 300 & 301) by July 1, 2018 and by March 2, 2019 and on this March 2nd date every year thereafter for all forms.

EMPLOYEE'S REPORT OF INJURY/NEAR MISS

Name:_____ Date of report:_____

Address:_____City:_____State:_____Zip:_____

Date of Birth:___/___/___. Male:___Female:___ Phone:_____-_____-_____

Hire Date:_____ Social Sec. #: _____-____-_____

Date of Injury:_____ Telephone Number: _____

Nature of Injury:_____

_____

Part of body injured:_____

Any Witnesses:_____ If yes, who:_____

What equipment was being used:_____

Anything out of the ordinary the day of the injury that may have contributed to the accident:_____

_____

Any other factors:_____

What could you have done to prevent the accident:_____

_____

Did you report your injury to your supervisor immediately? Yes:_____ No:____

If No, why?_____

_____

When did you report it to your supervisor:_____

Have you injured this part of your body before:_____If yes, When:_____

Employee's Signature:_____Date:_____

Near-Miss Report

Project Name: _____ **Trade Partner Involved (Company):** _____

NNCP Job #: _____ **Employee(s) Signature:** _____

Date of Near-Miss: _____ **Time:** _____ AM ☐ PM ☐

A near-miss is a potential hazard or incident that has not resulted in any personal injury or property damage. Unsafe working conditions, unsafe employee work habits, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and/or correct these potential accidents/incidents immediately. Please complete this form as a means to report these near-miss situations.

Describe the near-miss condition: (What happened and what was the hazard)		Insert picture of condition prior to near-miss (if applicable)
Primary Cause:		Insert picture of cause(s) (if applicable)
Contributing Cause:		
Recommended Corrective Action: (Remove the hazard, repair, replace or retrain the proper procedures for the task)		Insert picture of corrective action (if applicable)

Superintendent Signature: _____

Date Completed: _____

SUPERVISORS REPORT OF INJURY/NEAR MISS

Name of Injured:_____

Date of Injury:_____ Time of Injury:_____AM:___PM:____

Injured's Title:_____ Specific Job:_____

How long on this job:_____Length of Employment:_____

Describe what occurred:_____

_____

_____

Primary Accident Cause:_____

_____

Contributing Accident Cause:_____

_____

Recommended Corrective Action:_____

_____

How long to implement the recommended corrective action:_____

How will it eliminate reoccurrences:_____

_____

Supervisor Signature:_____Date:_____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 136 **Nxt Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Aerial Lifts

Purpose
To set a policy for the safe operation and training of personnel to use aerial lifts.

Scope
This program covers safe operation of all aerial lifts.

Responsibilities
The Subcontractor shall be responsible for establishment and implementation of the program.

Special Definitions

Procedure
1.0 LICENSING/CERTIFICATION

- **1.1** Employee(s) will be trained on the safe operation and characteristics of the aerial lift used at the job
- **1.2** The authority to operate an aerial lift at the job may be revoked at any time for unsafe operation of the aerial lift.

2.0 TRAINING

- **2.1** The Superintendent shall ensure training is provided as needed.
- **2.2** Training shall consist of both lecture and may involve practical training consisting of:
  - **2.2.1** Lecture, discussion, or video tape presentation and written materials
  - **2.2.2** Demonstration of each aerial lift.
  - **2.2.3** Hands-on practical experience exercises by trainee
  - **2.2.4** Culminating in a written test and a written evaluation of trainee(s) performance

3.0 DISCUSSION TOPICS

- **3.1** Only lifts approved for the atmosphere shall be used in areas designated as hazardous.
- **3.2** Batteries will only be charged in an approved battery charging area.
- **3.3** Acid will be poured into water, not water into acid when charging or maintaining batteries.
- **3.4** The lift shall be properly positioned when changing batteries.
- **3.5** Smoking in the battery charging area shall be prohibited.
- **3.6** Keep tools or other metal objects away from the posts on the battery.
- **3.7** The lift shall be inspected at the beginning of each day for mechanical defects and malfunctioning safety equipment.

3.8 Lifts shall not be driven toward another employee.
3.9 No employee will pass near the elevated lift.
3.10 The work surface shall be surveyed for changes in elevation, holes, drop offs, etc., that could affect the safe operation of the lift
3.11 Only trained drivers shall operate forklifts.
3.12 Arms and/or legs will not be permitted outside the running lines of the lift while traveling.
3.13 Operators shall be alert to low ceiling and piping.
3.14 Personnel will tie off to the lift with a body harness and lanyard in a boom truck or articulated lift
3.15 Personnel shall keep their feet on the floor of the basket or floor of the lift.
3.16 Personnel shall affix all gates or chains on the access side as soon as they have entered the lift.
3.17 Speed limits will be observed and a safe distance maintained between vehicles.
3.18 The driver is required to slow down at intersections if his/her vision is obstructed.
3.19 Avoid crossing railroad tracks
3.20 Grades shall be ascended or descended slowly and straight up and down
3.21 Stunt driving or horseplay will not be permitted.
3.22 Overloading is prohibited. The manufacturers load capacity will not be violated.
3.23 Any lift found to be in need of repair, defective, or in any way unsafe shall be immediately removed from service.

6.0 INSPECTION

6.1 The operator shall inspect the lift for safety and operational conditions and all safety guard(s) shall be on and operational at the beginning of the shift.

7.0 REFRESHER TRAINING

7.1 Each operator shall be retrained in a refresher course as follows:
- **7.1.1** When an operator has been observed operating his/her lift in an unsafe or hazardous manner
- **7.1.2** When an operator has been involved in an accident or near-miss incident
- **7.1.3** When an operator has been assigned to a different lift he/she has not been trained and certified to operate
- **7.1.4** When the workplace environment changes dictate

8.0 REVIEW

8.1 This program will be reviewed annually and updated as necessary.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 143 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Arc Flash Protection Program

Purpose
To define and establish the safety precautions and responsibilities for safe work practices when working on or near 50 to over 600 volts Direct Current (DC) and Alternating Current (AC). Guidelines for Personal Protective Equipment (PPE), energized work and electrical training are also provided.

Scope
This program applies to employees, visitors, and contractors at Newkirk Novak while performing supervising and/or executing electrical work, or work in the vicinity of electrical systems.

The intent of this policy is to supplement Occupational Safety and Health Administration (OSHA) regulations and accepted industry practices (i.e., National Fire Protection Association (NFPA) 70E) to the extent possible. It is the responsibility of the management at Newkirk Novak to ensure that this policy is consistently followed and adherence to this policy is maintained except in cases where the need for more stringent guidelines may be required.

Responsibilities
Maintenance personnel, employees and management shall adhere to this program from training through to completion of related tasks.

Supervisor Responsibilities:

Clearly identify the responsibilities of all individuals affected by this program.

Assure that all work involving electrical systems and circuits is performed following proper de-energizing and lockout/tagout procedures.

Stop any unsafe or inappropriate electrical work activity seen or reported by employees.

Site Safety Professional:

Provide procedures and exceptions to this program to Management.

Provide the means and methods for consistent implementation of the program by employees and contractors working on the premises.

Verify employees assigned to perform electrical work are properly "qualified" and trained to safely perform the work. Apprentices and/or new employees are only allowed to perform work under the direct supervision of qualified employees.

Maintain training records and program documentation as needed.

Periodic evaluation of the written program and auditing of employees to ensure the procedures are being followed.

Provide technical assistance, as needed, for program development.

Qualified Employee:

Follow proper de-energizing and lockout/tagout procedures prior to working on equipment.

Only "qualified persons" may work on electric circuit parts or equipment that has not been de-energized and locked out.

Comply with electrical safety requirements, including the use of appropriate PPE, as specified in this procedure and flame resistant clothing. Tables with appropriate PPE are listed at the end of this program.

Complete training and demonstrate knowledge in working within the respective voltage ranges.

Special Definitions

ARC - The passage of substantial electric current through ionized air.

ARC FLASH - The expanding arc of fireball emanating from the source of the arc. It may be from a fraction of an inch to ten feet or more in size. It involves extremely intense heat and may ignite anything combustible in its path. The duration is usually a fraction of a second.

ARC THERMAL PERFORMANCE VALUE (ATPV) - This is the rating of a protective garment or shield and refers to the maximum amount of energy that the garment or shield can withstand without breaking open or transmitting heat that would cause more than a second-degree burn.

CURABLE BURN - An electrical burn that is second degree or less

ENERGIZED - Electrically connected to a source of potential difference

ENERGIZED ELECTRICAL - Work performed near energized electrical system or equipment with exposed components operating at 50 volts or greater.

EQUIPMENT - A general term for material, fittings, devices, appliances, fixtures, or apparatus used as a part of or in connection with an electrical installation

EXPOSED - Capable of being inadvertently touched or approached by personnel nearer than a safe distance (This applies to parts that are not suitably guarded, insulated, or isolated)

FLAMMABLE MATERIAL - Any substance that is easily ignited and is capable of burning with great rapidity and flame (Flammable liquids have a flash point below 100 degrees Fahrenheit)

FLASH PROTECTION BOUNDARY - The distance from energized exposed electrical equipment at which an unprotected person will receive a curable burn

GUARDED - Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects

GROUND FAULT CIRCUIT INTERRUPTER (GFCI) - A device used to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the over current protective device of that supply circuit.

INSULATED - Separated from other conducting surface by a dielectric, including air space, and offering a high resistance to the passage of current

INSULATED Tools tested and approved by the manufacturer for the rated voltage or tools that are covered, surrounded or separated with a nonconductor material in order to prevent or reduce the transfer of electricity. Insulated tools are rated to a specific voltage.

LIMITED APPROACH BOUNDARY - Unqualified personnel or any conductive object they are holding must stay back from energized exposed or electrical components by the greater of this boundary and the Flash Protection Boundary.

MAY - Indicates permission is granted

NEAR - Conditions where contact with exposed electrical components is possible by slipping, tripping, falling, the actions of other, or inadvertent action of reasonable probability.

PROHIBITED APPROACH BOUNDARY - Shock protection boundary to be crossed only by a qualified person, which requires the same protection as if direct contact is made with a live part.

QUALIFIED PERSON - A person who has been trained in safe practices to avoid the electrical hazards of working on or near exposed energized parts and in familiar with the construction and operation of the equipment and the equipment and the hazards involved. An employee who is undergoing on-the-job training and has demonstrated an ability to perform duties safely at their respective level of training and is under the direct supervision of a qualified person may also perform these duties.

RESTRICTED APPROACH BOUNDARY - Shock protection boundary to be crossed only by a qualified person, which, due to its proximity to a shock hazard, requires the use of shock prevention techniques and equipment when crossed.

Procedure

1.0 WORKING WITHIN PROTECTIVE BOUNDARIES

- **1.1** Flash Protection Boundary – Boundaries for qualified persons, bystanders, and visitors shall comply with the NFPA 70E table for approach distances. A copy of that table is attached to this program.
- **1.2** Whenever work will be performed within the flash protection boundary, qualified person shall wear Flame Resistant (FR) clothing and personal protective equipment (PPE).

2.0 APPROACH BOUNDARIES TO LIVE PARTS

- **2.1** Qualified persons are prohibited from approaching or taking conductive objects within the restricted approach boundary unless:
  - **2.1.1** The qualified person is insulated or guarded from the live parts and no part of the person's body enters the prohibited space.
  - **2.1.2** The live part is insulated from the qualified person and from any other conductive object
  - **2.1.3** The qualified person is insulated from any other conductive object.
  - **2.1.4** Unqualified persons are not permitted to enter the approach boundaries unless the equipment involved is locked out and tagged out and in an electrically safe condition.

3.0 PERSONAL PROTECTIVE EQUIPMENT

- **3.1** Working within Flash Protection Boundary - When a qualified employee is working within the flash protection boundary he/she shall wear protective clothing and other personal protective equipment as required.
- **3.2** Examples of PPE - Some examples of Personal Protective Equipment (PPE) are listed below:
  - **3.2.1** Hard Hats – Class G and Class E
  - **3.2.2** Insulating gloves rated for the voltage being worked
  - **3.2.3** Leather protectors for insulating gloves
  - **3.2.4** Flame resistant clothing
  - **3.2.5** Flame resistant switching hood
  - **3.2.6** Safety glasses or goggles and face shields rated for arc flash protection
  - **3.2.7** Hearing protection

4.0 USING FLAME-RESISTANT CLOTHING

- **4.1** Where it has been determined that work will be performed in areas where there are electrical hazards, flame resistant (FR) clothing and other PPE shall be used by employees working within the Flash Protection Boundary. Recommended clothing will be 100% cotton pants and shirt or RF rated coveralls. Clothing made from synthetic materials such as acetate, nylon, polyester, rayon, or cotton blends containing these materials are prohibited.

5.0 INSPECTING AND MAINTAINING PPE

5.1 Safety and protective equipment and tools shall be visually inspected for damage and defects before each use. Each operator shall inspect and document his/her own equipment with any deficiencies reported to the Site Safety Professional. Each employee shall be trained in the proper use of electrical personal protective equipment (PPE) and demonstrate an understanding of its use and limitations. If any Supervisor believes an employee does not have this understanding, the employee shall be retrained.

5.2 NOTE: The PPE requirements contained in this section are designed to protect an employee from arc-flash and shock hazards. Electrical PPE will limit a burn to the skin to a curable burn.

5.3 Because of the explosive nature of some catastrophic electric failures, physical trauma may. Objects that could cause injury is an explosive arc flash should be removed or otherwise rendered safe.

6.0 WORKING ON ELECTRICAL CIRCUITS

6.1 Every effort shall be made to perform work in a de-energized state. LOTO procedures shall be used to de-energize and control systems and equipment whenever the unexpected start up or release of stored energy could cause injury.

6.2 All electrical equipment or circuits shall be treated as energized until all lockout/tagout procedures are in place and the equipment or circuit has been tested to verify that it is de-energized. Testing shall be performed using an adequately rated detector.

6.3 Live parts shall be de-energized before the employee works on or near them, unless one or more of the conditions listed below apply:

6.3.1 For testing or calibration, when tests cannot be done with the circuit or equipment de-energized.

6.3.2 For trouble shooting when the problem cannot be identified unless the circuit or equipment is energized.

6.3.3 It can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations.

6.4 In case where electrical conductors have been de-energized, but not locked out, the circuit and its surrounding area shall be treated as energized.

7.0 WORKING ON ENERGIZED PARTS

7.1 When work is performed near or on equipment or circuits that are or may be energized, safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contact. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

8.0 WARNING EMPLOYEES

8.1 Employees shall be warned and protected from exposed live parts by one or more of the following methods:

8.1.1 Safety signs and tags

8.1.2 Non-conductive barricades

8.1.3 Attendants stationed at the hazardous location

8.1.4 Energized Parts at Less Than 50 Volts

8.1.5 Energized parts that operate at less than 50 volts to ground are not required to be de-energized if there will be no increased exposure to electrical burns or to explosions due to electric arcs.

9.0 USING APPROVED TOOLS

9.1 When working on a circuit, use approved tools with insulated handles. DO NOT USE THESE TOOLS TO WORK ON ENERGIZED CIRCUITS. ALWAYS SHUT OFF AND DE- ENERGIZE CIRCUITS BEFORE BEGINNING WORK ON THEM.

10.0 WORKING ON VOLTAGE SYSTEMS OVER 600 VOLTS

10.1 Only approved employees may work on live electrical parts over 600 volts. It is recommended that only qualified electrical contractor shall be utilized to work on 600 volts circuits. At no time shall one person be allowed to work on 600 volt circuits.

11.0 TRAINING

11.1 General Training Requirements

11.1.1 Safety training shall be provided to employees who face the risk of electrical hazard within the scope of their work task or environment. Employees will be trained in safety related work practices and procedures as needed to provide them protection from the electrical hazards associated with their respective job task. This training should include the identification of electrical hazards and potential injuries.

11.1.2 Training shall consist of classroom training, on the job training, or a combination of both. The degree of training shall be determined by the risk to the employee and the job task assigned. Training shall be conducted prior to an employee starting work in an area where electrical hazards are present, whenever electrical hazards are added or changed in the work area, and/or an employee moves to another area where there are different electrical risks involved. Retraining shall be provided anytime there is a change in the process and when an audit or incident investigation indicates a need. All training shall be documented and the records should be retained for the duration of employment.

11.1.3 Employees working on or near exposed energized parts shall be trained on the company's emergency response action plan.

11.1.4 Qualified persons shall be trained and knowledgeable in the construction and operation of the equipment and specific work procedures. Training must be provided for recognizing and avoiding electrical hazards that might be present in the area. Qualified person must be familiar with proper procedures, PPE requirements, insulating and shielding techniques, insulated tools and test equipment.

11.1.5 In order to be qualified, the person permitted to work within limited approach boundaries of exposed electrical parts must receive training and be knowledgeable on the following:

11.1.5.1 Skills and techniques necessary to distinguish exposed energized parts from other parts of electrical equipment

11.1.5.2 Skills and techniques necessary for the specific voltage ranges
11.1.5.3 Skills and techniques to determine the nominal voltage of exposed energized parts
11.1.5.4 Approach distances and corresponding voltages of potential exposure
11.1.5.5 Able to determine the degree and extent of the hazard and the PPE and job planning to perform the task safely

12.0 Any employee not adhering to this SOP shall be subject to disciplinary actions up to and including termination.

Approach Boundaries

Nominal System Voltage Range	Limited Approach Boundary		Restricted Approach Boundary	Prohibited Approach Boundary
Phase-to-Phase	Exposed Moveable Conductor	Exposed Fixed Circuit Part	Includes Inadvertent Movement Adder	
0 - 50	Not specified	Not specified	Not specified	Not specified
51 - 300	10 ft. 0 in.	3 ft.6 in.	Avoid contact	Avoid contact
301 - 750	10 ft. 0 in.	3 ft.6 in.	1 ft. 0 in.	0 ft. 1 in.
751V - 15 kV	10 ft. 0 in.	5 ft.0 in.	2 ft. 2 in.	0 ft. 7 in.
15.1 – 36 kV	10 ft. 0 in.	6 ft.0 in.	2 ft. 7 in.	0 ft. 10 in.
36.1 – 46 kV	10 ft. 0 in.	8 ft.0 in.	2 ft. 10 in.	1 ft. 5 in.
46.1 – 72.5 kV	10 ft. 0 in.	8 ft.0 in.	3 ft. 3 in.	2 ft. 1 in.
72.6 – 121 kV	10 ft. 8 in.	8 ft.0 in.	3 ft. 3 in.	2 ft. 8 in.
138 – 145 kV	11 ft. 0 in.	10 ft.0 in.	3 ft. 7 in.	3 ft. 1 in.

Table 3-3.9.1 Hazard Risk Category Classifications

Task (Assumes Equipment is Energized, and Work is Done within the Flash Protection Boundary)	Hazard/Risk Category	V-Rated Gloves	V-Rated Tools
Panelboards rated 240 V and below – Notes 1 and 3	–	–	–
Circuit breaker (CB) or fused switch operation with covers on	O	N	N
CB or fused switch operation with covers off	O	N	N
Work on energized parts, including voltage testing	1	Y	Y
Remove / install CBs or fused switches	1	Y	Y
Removal of bolted covers (to expose bare, energized parts)	1	N	N
Opening hinged covers (to expose bare, energized parts)	O	N	N
Panelboards or Switchboards rated >240 V and up to 600 V (with molded case or insulated case circuit breakers) – Notes 1 and 3	–	–	–
CB or fused switch operation with covers on	O	N	N
CB or fused switch operation with covers off	1	N	N
Work on energized parts, including voltage testing	2*	Y	Y
600 V Class Motor Control Centers (MCCs) – Notes 2 (except as indicated) and 3	–	–	–
CB or fused switch or starter operation with enclosure doors closed	O	N	N
Reading a panel meter while operating a meter switch	O	N	N
CB or fused switch or starter operation with enclosure doors open	1	N	N
Work on energized parts, including voltage testing	2*	Y	Y
Work on control circuits with energized parts 120 V or below, exposed	O	Y	Y
Work on control circuits with energized parts>120 V exposed	2*	Y	Y

Table 3-3.9.3

Protective Clothing and Personal Protective Equipment (PPE) Matrix

Protective Clothing & Equipment	Protective Systems for Hazard / Risk Category					
Hazard / Risk Category / Number (Note 3)	**–1**	**0**	**1**	**2**	**3**	**4**
Untreated Natural Fiber	–	–	–	–	–	–
a. T-shirt (short sleeve)	X			X	X	X
b. Shirt (long-sleeve)		X				
c. Pants (long)	X	X	X (Note 4)	X (Note 6)	X	X
FR Clothing (Note 1)	–	–	–	–	–	–
a. Long-sleeve shirt			X	X	X (Note 9)	X
b. Pants			X (Note 4)	X (Note 6)	X (Note 9)	X
c. Coverall			(Note 5)	(Note 7)	X (Note 9)	(Note 5)
d. Jacket, parka, or rainware			AN	AN	AN	AN

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 139 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Barricade, Cone, and Tape Use

Purpose
The purpose of the barricade procedure is to reduce the risks of injury to employees when a potentially hazardous situation is present in an area that could affect employees' safety and health.

Scope
This procedure for barricading is applicable to all employees. This procedure is applicable to any hazardous condition by which barricading will reduce the risk to employees' safety and health.

This procedure represents the minimum requirements which must be met or exceeded by anyone involved in barricading any hazardous area.

The barricade procedure is applicable to barricading potentially hazardous areas, operations, or pieces of equipment such as:

Working overhead or handling materials overhead which creates a hazard to passersby due to the possibility of falling materials or tools.

Hazardous areas or equipment: Such as chemical usage, power tools, or hot processes

Hazardous conditions: Such as open sewers and sewer pits, excavations, and equipment with guards removed. Also, areas with suspected high concentrations of hazardous air contaminants, etc.

Responsibilities
Those erecting barricade tape shall perform the following:

Inform operating department personnel of the need to erect a barricade if pedestrian or vehicular routes are affected, or if operator access to production equipment is restricted.

Erect barricade tape around all entrances to the area with conspicuous posting of barricade signs.

Minimize the area barricaded to encompass only that required to prevent personnel exposure to the hazard.

Promptly remove barricade tape once the hazard(s) have been abated.
Ensure passersby do not cross barricade tape

Special Definitions

Caution Barricade: Barricading an area where specific potential hazards exist, using standard yellow tape with the word "CAUTION" in black letters and the barricade sign. Employees can enter this area when they are aware of the specific hazard, have taken the necessary precautions to avoid the hazard, and are required to enter the barricade in order to perform work. Persons entering this area should remain in the area no longer than necessary. The caution barricade shall be removed when the hazardous situation has been eliminated.

Danger Barricade: Barricading an area using the standard red tape with the word "DANGER" in black letters and the barricade sign. This is used to warn employees of imminent danger and that special precautions are necessary. The red tape with the word "DANGER" in black letters shall be used for hazards which are immediately dangerous. No one should enter those areas except those authorized to correct the hazard itself. The danger barricade shall be removed as soon as the imminent danger has been abated.

Barricade Sign: The barricade sign communicates important information regarding the safe and hazard sides of the barricade, who set-up the barricade, the nature of the hazard, and the reason for barricading the area.

Standard Barricade Tape: The barricade tape identifies either a caution, or a danger barricade and the boundary around the hazard area.

Watchman/Flagman: An employee whose sole responsibility is to monitor the hazard area in lieu of or in addition to a barricade tape barrier to eliminate or minimize exposure of others to the hazard. Due to the potential transient nature of work activity, instructions from a watchman/flagman supersede that of posted barricade tape/signs.

Procedure

1.0 GENERAL REQUIREMENTS

1.1 Barricading areas where a hazard exists which could threaten the safety and health of employees entering an area shall be accomplished as follows:

1.1.1 Obtain appropriate tape and signs for barricading the area. There must be 360 degree coverage with the barricade tape, and barricade signs must be posted on all sides and at all normal entrances to the area. The barricade tape and signs must also cover entrances to the barricaded area by stairs or ladders from above or below.

1.1.2 Barricade only the minimum area necessary to protect safety and health. When the barricade will interfere with a regular pedestrian or vehicular thoroughfare, or access to equipment, coordinate the barricading with the operating area supervisor to preserve the thoroughfare or identify an alternate thoroughfare, or means of access.

1.1.3 As soon as the hazard no longer exists, all barricade tape and signs shall be removed.

2.0 Work Practices inside a Barricade

2.1 Employees must evaluate all potential hazards when working inside a barricade. They must take the necessary precautions to protect themselves from the hazards or eliminate the hazards.

2.2 Precautions need to be taken to assure respiratory protection (respiratory equipment), chemical or thermal burn protection (rain suit, face shield, gloves, boots), and fall protection (safety harness appropriately tied off), as appropriate for the specific hazards inside the barricaded area,

2.3 Exceptions

2.3.1 Very short durations of potential exposure to a hazard or a change in the hazards within a barricaded area may require posting a watchman/flagman to warn passersby and other personnel working in the area. An adequate number of watchman/flagman shall be posted to stop pedestrian and vehicular traffic in all access routes to the potentially hazardous area.

2.4 While barricading according to this procedure may be used to temporarily identify operating equipment with guards removed, structural, rigid barriers shall be installed as soon as possible.

2.5 For repetitive postings, operating departments may elect to install and utilize more durable barricade components such as chain and fiberglass signs in lieu of the standard barricade tape and paper sign. However, the markings of these alternative barricade components shall be consistent with the requirements of this procedure (e.g., yellow chain with a caution sign or red chain with a danger sign).

2.6 Barricade tape and barricade signs may also be used for purposes of identifying operational (energized) equipment in the vicinity of personnel working on other equipment.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 126 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Bloodborne Pathogens

Purpose
To communicate standard methods addressing exposure to Blood Borne Pathogens and the use of safe work practices, personal protective equipment and cleaning, disinfecting and disposal of infectious waste.

Scope
This program applies to all occupational exposures to blood or other potentially infectious materials encountered by personnel employed by Newkirk Novak and who are required to perform first aid or CPR.

Employees with potential occupational exposure at this work site are the first aid responders.

Exposure would be likely to occur during administering first aid in the treatment of injuries. This Infection Control Plan shall be effective upon exposure. All requirements of the plan shall be fully implemented prior to this date.

Responsibilities

Special Definitions

Procedure
1.0 INFECTION CONTROL

- **1.1** This plan shall be reviewed each six (6) months and changes will be made as practices and new health information becomes available. It will be the responsibility of the Safety Director to monitor the continued effectiveness of this program.
- **1.2** Engineering and Work Practices
  - **1.2.1** Employees will wash their hands immediately after removing protective equipment or after contact with blood or other potential infectious materials.
  - **1.2.2** All protective equipment shall be removed immediately after leaving the treatment area and placed in containers for storage, washing, decontamination or disposal.
  - **1.2.3** Used sharps shall not be sheared, bent, broken, recapped, or re-sheathed by hand.
  - **1.2.4** Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lens are prohibited in work areas where there is a potential for occupational exposure.

1.2.5 Food and drink shall not be stored in refrigerators or cabinets where potential infectious materials may be present.

1.2.6 All procedures involving blood or other potential infectious material shall be performed in such a manner as to minimize splashing, spraying or aerosolization of these substances.

1.2.7 Mouth pipetting/suctioning is prohibited.

1.3 Personal Protective Equipment

1.3.1 The employer shall provide all personal protective equipment required by this program.

1.3.2 The employer shall assure that appropriate personal protective equipment in the appropriate size is readily accessible at the worksite. Hypoallergenic gloves shall be readily available if required by an employee.

1.3.3 The employer shall provide for the cleaning, laundering or disposal of personal protective equipment.

1.3.4 The employer shall repair or replace required personal protective equipment as needed to maintain its effectiveness.

1.3.5 Gloves shall be worn when the employee has the potential for the hands to have direct skin contact with blood, or other potentially infectious material, mucous membranes, non-intact skin and when handling surfaces soiled with blood or other potentially infectious material.

1.3.6 Only disposable (single use) gloves shall be used in this facility.

1.3.7 Full face shields or eye protection and face masks shall be worn whenever splashes, spray, splatter, droplets, or aerosols of blood or other potentially infectious material may generated and there is a potential for eye, nose, or mouth contamination.

1.3.8 Gowns, aprons and other protective body equipment shall be worn when the employee has a potential for occupational exposure.

1.3.9 Vinyl aprons shall be worn if there is a potential for splashing or spraying of blood or other potentially infectious materials.

1.3.10 Surgical caps or hoods shall be worn if there is a potential for splashing of splattering of blood or other potentially infectious materials on the head.

1.3.11 Fluid-proof shoe covers shall be worn if there is a potential for shoes to become contaminated and/or soaked with blood or other potentially infectious material.

1.4 Cleaning and Disinfection

1.4.1 All equipment and environmental and working surfaces shall be properly cleaned and disinfected after contact with blood or other potentially infectious material. This cleaning will be accomplished immediately after treatment is completed.

1.4.2 Broken glassware, which may have been contaminated, shall not be picked up directly by hand. A mechanical means shall be used such as a broom and dustpan.

1.4.3 Reusable items contaminated with blood or other potentially infectious material shall be decontaminated prior to washing and/or reprocessing.

1.5 Infectious Waste Disposal

1.5.1 All infectious waste destined for disposal shall be placed in closable, leak proof containers or bags, which are color coded or labeled as required.

1.5.2 Disposal of all infectious waste shall be in accordance with appropriate federal, state and/or local regulations.

1.5.3 Immediately after use, sharps shall be disposed of in closable, puncture resistant, disposable containers, which are leak proof on the sides and bottom and that, are labeled or color-coded. These containers shall be readily accessible and located in the immediate area of use. These containers shall be replaced routinely and not allowed to overfill.

1.6 Laundry

1.6.1 Laundry contaminated with blood or other potentially infectious materials shall be handled as little as possible.

1.6.2 Contaminated clothing shall be bagged in the work area.

1.6.3 Contaminated laundry shall be placed and transported in bags that are labeled and color-coded.

1.6.4 Laundry workers will wear protective gloves and other protective equipment to prevent occupational exposure during handling or sorting.

1.7 Hepatitis "B" Vaccination and Post Exposure Follow-Up

1.7.1 The employer shall make available hepatitis "B" vaccination to all employees who have occupational exposure.

1.7.2 A licensed physician will perform medical evaluations and an accredited laboratory will perform procedures and all laboratory tests.

1.7.3 Evaluations, procedures, vaccinations, and post-exposure management will be provided to the employee at a reasonable time and place.

1.8 HBV Vaccination

1.8.1 HBV vaccinations will be offered to all employees occupationally exposed, unless the employee had a previous HBV vaccination or unless antibody testing has revealed that the employee is immune. Booster does will be provided according to the standard recommendations for medical practice.

1.8.2 HBV antibody testing shall be made available to an employee who desires such testing prior to deciding whether or not to receive HBV vaccination.

1.9 Post Exposure Evaluation and Follow-Up

1.9.1 Following a report of an exposure incident, the employer shall make available to each employee exposed, a confidential medical evaluation and follow-up including at least the following elements:

1.9.1.1 Documentation of the route(s) of exposure, HBV and HIV antibody status of source patient(s) (if known) circumstances under which exposure occurred

1.9.1.2 If the source patient can be determined and permission obtained, collection of and testing of the source patient’s blood to determine the presence of HIV or HBV infection

1.9.1.3 Collect blood from the exposed employee as soon as possible after the exposure incident for determination of HIV and/or HBV status. The employee may request that actual antibody or antigen testing of the blood or serum sample be done at a later date and time

1.9.1.4 A follow-up of the exposed employee including antibody or antigen testing, counseling, illness reporting, and safe and effective post-exposure prophylaxis, shall be conducted according to standard recommendations for medical practices

1.9.2 The employer shall provide to the evaluating physician the following information.

1.9.2.1 A copy of this plan and OSHA Standard 29 CFR 1910-1030 and its appendices

1.9.2.2 A description of the affected employee's duties as they relate to the employee's occupational exposure

1.9.3 For each evaluation under this plan, the employer shall obtain and provide the employee with a copy of the evaluating physician's written opinion within 15 days of the completion of the evaluation. The written opinion shall be limited to the following information.

1.9.3.1 The physician's recommended limitations upon the employee's ability to receive hepatitis "B" vaccination.

1.9.3.2 A statement that the employee has been informed of the medical evaluation and that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious material which require further medical treatment.

1.9.3.3 Specific findings or diagnoses, which are related to the employee's ability to receive HBV vaccination. Any other findings and diagnoses shall remain confidential.

1.10 Medical Recordkeeping

1.10.1 Medical records required by this plan shall be maintained in accordance with Paragraph "M" of this plan.

1.11 Communication of Hazards to Employees

1.11.1 A warning label shall be affixed to containers of infectious waste. The label required shall include the legend "BIOHAZARD".

1.11.2 These labels shall be florescent orange or orange-red or predominantly so, with lettering or symbols in a contrasting color.

1.11.3 These labels shall be an integral part of the container or shall be affixed as close as possible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

1.11.4 Red bags or containers may be substituted for labels on containers of infectious waste.

1.12 Information and Training

1.12.1 All employees with an occupational exposure shall participate in a training program.

1.12.2 Training shall be provided at the time of initial employment and annually thereafter.

1.12.3 Materials appropriate in content and vocabulary to educational level, literacy, and language background of employees shall be used.

1.12.4 The training program shall consist of the following elements:

1.12.4.1 A copy of 29 CFR 1910.1030 and this plan.

1.12.4.2 A general explanation of the epidemiology and symptoms of bloodborne diseases.

1.12.4.3 An explanation of the modes of transmission of bloodborne pathogens.

1.12.4.4 An explanation of this program.

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

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

1.12.4.7 Information on the types, proper use, location, removal, handling, decontamination and/or disposal of personal protective equipment.

1.12.4.8 An explanation of the basis for selection of personal protective equipment.

1.12.4.9 Information on hepatitis "B" vaccine, including its efficacy, safety, and the benefits of being vaccinated.

1.12.4.10 Information on appropriate actions to take and persons to contact in an emergency.

1.12.4.11 An explanation of procedures to follow if an incident occurs, including the method of reporting the incident and medical follow-up that will be made available. Also information on the medical counseling that the employer is providing for exposed individuals.

1.12.4.12 An explanation of the signs and labels and/or color-coding required by this plan.

1.13 Recordkeeping

1.13.1 The employer shall establish and maintain an accurate record for each employee subject to Paragraph 1 of this plan and in accordance with 29 CFR 1910.1020

1.13.1.1 These records shall include:

1.13.1.1.1 The name and social security number of the employee

1.13.1.1.2 A copy of the employee's hepatitis "B" vaccination records and medical records relative to the employee's ability to receive vaccination or the circumstances of an exposure incident

1.13.1.1.3 A copy of all results of physical examinations, medical testing, and follow-up procedures as they related to the employee's ability to receive vaccination or to post exposure evaluation following an exposure incident

1.13.1.1.4 The employer's copy of the physician's written opinion

1.13.1.1.5 A copy of the information provided to the physician as required by Paragraph 1 (I) 2

1.13.1.1.6 Confidentiality. The employer shall assure that employee medical records required by Paragraph 1 of this plan are:

1.13.1.1.6.1 Kept confidential

1.13.1.1.6.2 Not disclosed or reported to any person within or outside the workplace except as required by this section or as may be required by law

1.13.1.1.7 Records will be maintained for at least the duration of employment plus thirty (30) years.

1.14 Training Records

1.14.1 Training records shall contain the following information:

1.14.1.1 The dates of the training sessions.

1.14.1.2 The contents or summary of the training sessions

1.14.1.3 The names of persons conducting the training

1.14.1.4 The names of all persons attending the training sessions

1.14.2 Training records shall be maintained for five (5) years

1.15 Availability

1.15.1 All records required to be maintained by this section shall be made available, upon request, to the Assistant Secretary and the Director for examination and copying.

1.15.2 Employee training records required by this paragraph shall be provided, upon request for examination and copying, to employees, employee representatives, and the Assistance Secretary in accordance with 29 CFR 1910.1020.

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

1.16 Transfer of Records

1.16.1 The employer shall comply with the requirements of 29 CFR 1910.20 in the transfer of records.

1.16.2 If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director at least three (3) months prior to disposal and transmit them to the Director if required by the Director to do so within a three (3) month period.

Vaccination Declination Form

Date:_____

Employee Name:_____

Employee ID#: _____

I understand that due to my occupational exposure to blood or other potential infectious materials, I may be at risk of acquiring the Hepatitis B viral (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself.

However, I decline the 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 the Hepatitis B vaccine, I can receive the vaccination series, at no charge to me, at that time.

_____ _____

Employee Signature Date

Safety Officer Signature _____ Date_____

Employee Consent to Hepatitis B Vaccine

On_____ I,_____ , received information concerning the risk of occupational exposure to blood or other potentially infectious material in the position of_____ .

I have been informed and understand that: (1) Hepatitis B vaccination may reduce the potential risk of occupationally contracted viral hepatitis infection, and; (2) the risks of the Hepatitis B vaccination which may include pain, itching, bruising at the injection site, sweating, weakness, chills, flushing and tingling, and, (3) to obtain adequate immunity to viral Hepatitis B, it will be necessary to receive all three vaccinations of the vaccine series which are administered one month and six months after the initial vaccination, and; (4) the vaccination will be provided to me free of charge by _____. If at such future time the U.S. Public Health Service recommends a booster dose(s) of Hepatitis B vaccine, such booster dose(s) shall also be provided to me at no cost if I am employed by the facility in a job classification that involves some risk of an occupational exposure to blood or other potentially infectious materials.

If I leave the employment of this facility before the series is completed, it is my responsibility to contact my own medical provider to complete the vaccine series.

I hereby consent to the administration of the Hepatitis B vaccination and voluntarily acknowledge that:

- I do not have an allergy to yeast.
- I am not pregnant or nursing.
- I am not planning to become pregnant within the next six months.
- I have not had a fever, gastric symptoms, respiratory symptoms, or other signs of illness in the last 48 hours.
- I do have the following known allergies:
- Food:
- Drugs:
- Other:

YOU MAY WISH TO CONSULT WITH YOUR PHYSICIAN BEFORE TAKING THE VACCINE.

_____ _____
Name and SSN Date

_____ _____
Witness Date

(Witness) **(Date)**

Regulations (Standards - 29 CFR)

Bloodborne pathogens. - 1910.1030

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1030
- **Title:** Bloodborne pathogens.

- **Appendix:** A

1910.1030(a)

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

1910.1030(b)

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

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, or designated representative.

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means pathogenic 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 means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

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

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

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

Engineering Controls means controls (e.g., sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

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

Handwashing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

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

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Needleless systems means a device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (2) The administration of medication or fluids; or (3) Any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

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

Other Potentially Infectious Materials means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

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

Production Facility means a facility engaged in industrial-scale, large-volume or high concentration production of HIV or HBV.

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

Research Laboratory means a laboratory producing or using research-laboratory-scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or

HBV but not in the volume found in production facilities.

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

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

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

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

1910.1030(c)

Exposure Control --

1910.1030(c)(1)

Exposure Control Plan.

1910.1030(c)(1)(i)

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

1910.1030(c)(1)(ii)

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

1910.1030(c)(1)(ii)(A)

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

1910.1030(c)(1)(ii)(B)

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

1910.1030(c)(1)(ii)(C)

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

1910.1030(c)(1)(iii)

Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees in accordance with 29 CFR 1910.1020(e).

1910.1030(c)(1)(iv)

The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

1910.1030(c)(1)(iv)(A)

Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and

1910.1030(c)(1)(iv)(B)

Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

1910.1030(c)(1)(v)

An employer, who is required to establish an Exposure Control Plan shall solicit input from non-managerial employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the solicitation in the Exposure Control Plan.

1910.1030(c)(1)(vi)

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

1910.1030(c)(2)

Exposure Determination.

1910.1030(c)(2)(i)

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

1910.1030(c)(2)(i)(A)

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

1910.1030(c)(2)(i)(B)

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

1910.1030(c)(2)(i)(C)

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

1910.1030(c)(2)(ii)

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

1910.1030(d)

Methods of Compliance --

1910.1030(d)(1)

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

1910.1030(d)(2)

Engineering and Work Practice Controls.

1910.1030(d)(2)(i)

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

1910.1030(d)(2)(ii)

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

1910.1030(d)(2)(iii)

Employers shall provide handwashing facilities which are readily accessible to employees.

1910.1030(d)(2)(iv)

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

1910.1030(d)(2)(v)

Employers shall ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

1910.1030(d)(2)(vi)

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

1910.1030(d)(2)(vii)

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

1910.1030(d)(2)(vii)(A)
Contaminated needles and other contaminated sharps shall not be bent, recapped or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.
1910.1030(d)(2)(vii)(B)
Such bending, recapping or needle removal must be accomplished through the use of a mechanical device or a one-handed technique.
1910.1030(d)(2)(viii)
Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in appropriate containers until properly reprocessed. These containers shall be:
1910.1030(d)(2)(viii)(A)
Puncture resistant;
1910.1030(d)(2)(viii)(B)
Labeled or color-coded in accordance with this standard;
1910.1030(d)(2)(viii)(C)
Leakproof on the sides and bottom; and
1910.1030(d)(2)(viii)(D)
In accordance with the requirements set forth in paragraph (d)(4)(ii)(E) for reusable sharps.
1910.1030(d)(2)(ix)
Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.
1910.1030(d)(2)(x)
Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.
1910.1030(d)(2)(xi)
All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.
1910.1030(d)(2)(xii)
Mouth pipetting/suctioning of blood or other potentially infectious materials is prohibited.
1910.1030(d)(2)(xiii)
Specimens of blood or other potentially infectious materials shall be placed in a container which prevents leakage during collection, handling, processing, storage, transport, or shipping.
1910.1030(d)(2)(xiii)(A)
The container for storage, transport, or shipping shall be labeled or color-coded according to paragraph (g)(1)(i) and closed prior to being stored, transported, or shipped. When a facility utilizes Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary provided containers are recognizable as containing specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding in accordance with paragraph (g)(1)(i) is required when such specimens/containers leave the facility.
1910.1030(d)(2)(xiii)(B)
If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded according to the requirements of this standard.
1910.1030(d)(2)(xiii)(C)
If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.
1910.1030(d)(2)(xiv)
Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.
1910.1030(d)(2)(xiv)(A)
A readily observable label in accordance with paragraph (g)(1)(i)(H) shall be attached to the equipment stating which portions remain contaminated.
1910.1030(d)(2)(xiv)(B)

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

1910.1030(d)(3)

Personal Protective Equipment --

1910.1030(d)(3)(i)

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

1910.1030(d)(3)(ii)

Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgement, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

1910.1030(d)(3)(iii)

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

1910.1030(d)(3)(iv)

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

1910.1030(d)(3)(v)

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

1910.1030(d)(3)(vi)

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

1910.1030(d)(3)(vii)

All personal protective equipment shall be removed prior to leaving the work area.

1910.1030(d)(3)(viii)

When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

1910.1030(d)(3)(ix)

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

1910.1030(d)(3)(ix)(A)

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

1910.1030(d)(3)(ix)(B)

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

1910.1030(d)(3)(ix)(C)

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

1910.1030(d)(3)(ix)(D)
If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary then the employer shall:
1910.1030(d)(3)(ix)(D)(1)
Periodically reevaluate this policy;
1910.1030(d)(3)(ix)(D)(2)
Make gloves available to all employees who wish to use them for phlebotomy;
1910.1030(d)(3)(ix)(D)(3)
Not discourage the use of gloves for phlebotomy; and
1910.1030(d)(3)(ix)(D)(4)
Require that gloves be used for phlebotomy in the following circumstances:
1910.1030(d)(3)(ix)(D)(4)(i)
When the employee has cuts, scratches, or other breaks in his or her skin;
1910.1030(d)(3)(ix)(D)(4)(ii)
When the employee judges that hand contamination with blood may occur, for example, when performing phlebotomy on an uncooperative source individual; and
1910.1030(d)(3)(ix)(D)(4)(iii)
When the employee is receiving training in phlebotomy.
1910.1030(d)(3)(x)
Masks, Eye Protection, and Face Shields. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.
1910.1030(d)(3)(xi)
Gowns, Aprons, and Other Protective Body Clothing. Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.
1910.1030(d)(3)(xii)
Surgical caps or hoods and/or shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated (e.g., autopsies, orthopaedic surgery).
1910.1030(d)(4)
Housekeeping --
1910.1030(d)(4)(i)
General. Employers shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.
1910.1030(d)(4)(ii)
All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.
1910.1030(d)(4)(ii)(A)
Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.
1910.1030(d)(4)(ii)(B)
Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the workshift if they may have become contaminated during the shift.
1910.1030(d)(4)(ii)(C)
All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.
1910.1030(d)(4)(ii)(D)
Broken glassware which may be contaminated shall not be picked up directly with the hands.

It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

1910.1030(d)(4)(ii)(E)

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

1910.1030(d)(4)(iii)

Regulated Waste --

1910.1030(d)(4)(iii)(A)

Contaminated Sharps Discarding and Containment.

1910.1030(d)(4)(iii)(A)(1)

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

1910.1030(d)(4)(iii)(A)(1)(i)

Closable;

1910.1030(d)(4)(iii)(A)(1)(ii)

Puncture resistant;

1910.1030(d)(4)(iii)(A)(1)(iii)

Leakproof on sides and bottom; and

1910.1030(d)(4)(iii)(A)(1)(iv)

Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard.

1910.1030(d)(4)(iii)(A)(2)

During use, containers for contaminated sharps shall be:

1910.1030(d)(4)(iii)(A)(2)(i)

Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);

1910.1030(d)(4)(iii)(A)(2)(ii)

Maintained upright throughout use; and

1910.1030(d)(4)(iii)(A)(2)(iii)

Replaced routinely and not be allowed to overfill.

1910.1030(d)(4)(iii)(A)(3)

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

1910.1030(d)(4)(iii)(A)(3)(i)

Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;

1910.1030(d)(4)(iii)(A)(3)(ii)

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

1910.1030(d)(4)(iii)(A)(3)(ii)(A)

Closable;

1910.1030(d)(4)(iii)(A)(3)(ii)(B)

Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and

1910.1030(d)(4)(iii)(A)(3)(ii)(C)

Labeled or color-coded according to paragraph (g)(1)(i) of this standard.

1910.1030(d)(4)(iii)(A)(4)

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

1910.1030(d)(4)(iii)(B)

Other Regulated Waste Containment --

1910.1030(d)(4)(iii)(B)(1)

Regulated waste shall be placed in containers which are:

1910.1030(d)(4)(iii)(B)(1)(i)

Closable;

1910.1030(d)(4)(iii)(B)(1)(ii)

Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;

1910.1030(d)(4)(iii)(B)(1)(iii)

Labeled or color-coded in accordance with paragraph (g)(1)(i) this standard; and

1910.1030(d)(4)(iii)(B)(1)(iv)

Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

1910.1030(d)(4)(iii)(B)(2)
If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:
1910.1030(d)(4)(iii)(B)(2)(i)
Closable;
1910.1030(d)(4)(iii)(B)(2)(ii)
Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
1910.1030(d)(4)(iii)(B)(2)(iii)
Labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard; and
1910.1030(d)(4)(iii)(B)(2)(iv)
Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.
1910.1030(d)(4)(iii)(C)
Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.
1910.1030(d)(4)(iv)
Laundry.
1910.1030(d)(4)(iv)(A)
Contaminated laundry shall be handled as little as possible with a minimum of agitation.
1910.1030(d)(4)(iv)(A)(1)
Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.
1910.1030(d)(4)(iv)(A)(2)
Contaminated laundry shall be placed and transported in bags or containers labeled or color-coded in accordance with paragraph (g)(1)(i) of this standard. When a facility utilizes Universal Precautions in the handling of all soiled laundry, alternative labeling or color-coding is sufficient if it permits all employees to recognize the containers as requiring compliance with Universal Precautions.
1910.1030(d)(4)(iv)(A)(3)
Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through of or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.
1910.1030(d)(4)(iv)(B)
The employer shall ensure that employees who have contact with contaminated laundry wear protective gloves and other appropriate personal protective equipment.
1910.1030(d)(4)(iv)(C)
When a facility ships contaminated laundry off-site to a second facility which does not utilize Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place such laundry in bags or containers which are labeled or color-coded in accordance with paragraph (g)(1)(i).
1910.1030(e)
HIV and HBV Research Laboratories and Production Facilities.
1910.1030(e)(1)
This paragraph applies to research laboratories and production facilities engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV. It does not apply to clinical or diagnostic laboratories engaged solely in the analysis of blood, tissues, or organs. These requirements apply in addition to the other requirements of the standard.
1910.1030(e)(2)
Research laboratories and production facilities shall meet the following criteria:
1910.1030(e)(2)(i)
Standard Microbiological Practices. All regulated waste shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.
1910.1030(e)(2)(ii)
Special Practices.
1910.1030(e)(2)(ii)(A)
Laboratory doors shall be kept closed when work involving HIV or HBV is in progress.
1910.1030(e)(2)(ii)(B)
Contaminated materials that are to be decontaminated at a site away from the work area

shall be placed in a durable, leakproof, labeled or color-coded container that is closed before being removed from the work area.

1910.1030(e)(2)(ii)(C)

Access to the work area shall be limited to authorized persons. Written policies and procedures shall be established whereby only persons who have been advised of the potential biohazard, who meet any specific entry requirements, and who comply with all entry and exit procedures shall be allowed to enter the work areas and animal rooms.

1910.1030(e)(2)(ii)(D)

When other potentially infectious materials or infected animals are present in the work area or containment module, a hazard warning sign incorporating the universal biohazard symbol shall be posted on all access doors. The hazard warning sign shall comply with paragraph (g)(1)(ii) of this standard.

1910.1030(e)(2)(ii)(E)

All activities involving other potentially infectious materials shall be conducted in biological safety cabinets or other physical-containment devices within the containment module. No work with these other potentially infectious materials shall be conducted on the open bench.

1910.1030(e)(2)(ii)(F)

Laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing shall be used in the work area and animal rooms. Protective clothing shall not be worn outside of the work area and shall be decontaminated before being laundered.

1910.1030(e)(2)(ii)(G)

Special care shall be taken to avoid skin contact with other potentially infectious materials. Gloves shall be worn when handling infected animals and when making hand contact with other potentially infectious materials is unavoidable.

1910.1030(e)(2)(ii)(H)

Before disposal all waste from work areas and from animal rooms shall either be incinerated or decontaminated by a method such as autoclaving known to effectively destroy bloodborne pathogens.

1910.1030(e)(2)(ii)(I)

Vacuum lines shall be protected with liquid disinfectant traps and high-efficiency particulate air (HEPA) filters or filters of equivalent or superior efficiency and which are checked routinely and maintained or replaced as necessary.

1910.1030(e)(2)(ii)(J)

Hypodermic needles and syringes shall be used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles. Only needle-locking syringes or disposable syringe-needle units (i.e., the needle is integral to the syringe) shall be used for the injection or aspiration of other potentially infectious materials. Extreme caution shall be used when handling needles and syringes. A needle shall not be bent, sheared, replaced in the sheath or guard, or removed from the syringe following use. The needle and syringe shall be promptly placed in a puncture-resistant container and autoclaved or decontaminated before reuse or disposal.

1910.1030(e)(2)(ii)(K)

All spills shall be immediately contained and cleaned up by appropriate professional staff or others properly trained and equipped to work with potentially concentrated infectious materials.

1910.1030(e)(2)(ii)(L)

A spill or accident that results in an exposure incident shall be immediately reported to the laboratory director or other responsible person.

1910.1030(e)(2)(ii)(M)

A biosafety manual shall be prepared or adopted and periodically reviewed and updated at least annually or more often if necessary. Personnel shall be advised of potential hazards, shall be required to read instructions on practices and procedures, and shall be required to follow them.

1910.1030(e)(2)(iii)

Containment Equipment.

1910.1030(e)(2)(iii)(A)

Certified biological safety cabinets (Class I, II, or III) or other appropriate combinations of personal protection or physical containment devices, such as special protective clothing, respirators, centrifuge safety cups, sealed centrifuge rotors, and containment caging for

animals, shall be used for all activities with other potentially infectious materials that pose a threat of exposure to droplets, splashes, spills, or aerosols.

1910.1030(e)(2)(iii)(B)

Biological safety cabinets shall be certified when installed, whenever they are moved and at least annually.

1910.1030(e)(3)

HIV and HBV research laboratories shall meet the following criteria:

1910.1030(e)(3)(i)

Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area.

1910.1030(e)(3)(ii)

An autoclave for decontamination of regulated waste shall be available.

1910.1030(e)(4)

HIV and HBV production facilities shall meet the following criteria:

1910.1030(e)(4)(i)

The work areas shall be separated from areas that are open to unrestricted traffic flow within the building. Passage through two sets of doors shall be the basic requirement for entry into the work area from access corridors or other contiguous areas. Physical separation of the high-containment work area from access corridors or other areas or activities may also be provided by a double-doored clothes-change room (showers may be included), airlock, or other access facility that requires passing through two sets of doors before entering the work area.

1910.1030(e)(4)(ii)

The surfaces of doors, walls, floors and ceilings in the work area shall be water resistant so that they can be easily cleaned. Penetrations in these surfaces shall be sealed or capable of being sealed to facilitate decontamination.

1910.1030(e)(4)(iii)

Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area.

1910.1030(e)(4)(iv)

Access doors to the work area or containment module shall be self-closing.

1910.1030(e)(4)(v)

An autoclave for decontamination of regulated waste shall be available within or as near as possible to the work area.

1910.1030(e)(4)(vi)

A ducted exhaust-air ventilation system shall be provided. This system shall create directional airflow that draws air into the work area through the entry area. The exhaust air shall not be recirculated to any other area of the building, shall be discharged to the outside, and shall be dispersed away from occupied areas and air intakes. The proper direction of the airflow shall be verified (i.e., into the work area).

1910.1030(e)(5)

Training Requirements. Additional training requirements for employees in HIV and HBV research laboratories and HIV and HBV production facilities are specified in paragraph (g)(2)(ix).

1910.1030(f)

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

1910.1030(f)(1)

General.

1910.1030(f)(1)(i)

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

1910.1030(f)(1)(ii)

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

1910.1030(f)(1)(ii)(A)

Made available at no cost to the employee;

1910.1030(f)(1)(ii)(B)

Made available to the employee at a reasonable time and place;
1910.1030(f)(1)(ii)(C)
Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and
1910.1030(f)(1)(ii)(D)
Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).
1910.1030(f)(1)(iii)
The employer shall ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.
1910.1030(f)(2)
Hepatitis B Vaccination.
1910.1030(f)(2)(i)
Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.
1910.1030(f)(2)(ii)
The employer shall not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination.
1910.1030(f)(2)(iii)
If the employee initially declines hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the employer shall make available hepatitis B vaccination at that time.
1910.1030(f)(2)(iv)
The employer shall assure that employees who decline to accept hepatitis B vaccination offered by the employer sign the statement in Appendix A.
1910.1030(f)(2)(v)
If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available in accordance with section (f)(1)(ii).
1910.1030(f)(3)
Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:
1910.1030(f)(3)(i)
Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;
1910.1030(f)(3)(ii)
Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;
1910.1030(f)(3)(ii)(A)
The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, shall be tested and the results documented.
1910.1030(f)(3)(ii)(B)
When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.
1910.1030(f)(3)(ii)(C)
Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
1910.1030(f)(3)(iii)
Collection and testing of blood for HBV and HIV serological status;
1910.1030(f)(3)(iii)(A)
The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

1910.1030(f)(3)(iii)(B)
If the employee consents to baseline blood collection, but does not give 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.
1910.1030(f)(3)(iv)
Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service;
1910.1030(f)(3)(v)
Counseling; and
1910.1030(f)(3)(vi)
Evaluation of reported illnesses.
1910.1030(f)(4)
Information Provided to the Healthcare Professional.
1910.1030(f)(4)(i)
The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation.
1910.1030(f)(4)(ii)
The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:
1910.1030(f)(4)(ii)(A)
A copy of this regulation;
1910.1030(f)(4)(ii)(B)
A description of the exposed employee's duties as they relate to the exposure incident;
1910.1030(f)(4)(ii)(C)
Documentation of the route(s) of exposure and circumstances under which exposure occurred;
1910.1030(f)(4)(ii)(D)
Results of the source individual's blood testing, if available; and
1910.1030(f)(4)(ii)(E)
All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.
1910.1030(f)(5)
Healthcare Professional's Written Opinion. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.
1910.1030(f)(5)(i)
The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.
1910.1030(f)(5)(ii)
The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:
1910.1030(f)(5)(ii)(A)
That the employee has been informed of the results of the evaluation; and
1910.1030(f)(5)(ii)(B)
That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
1910.1030(f)(5)(iii)
All other findings or diagnoses shall remain confidential and shall not be included in the written report.
1910.1030(f)(6)
Medical Recordkeeping. Medical records required by this standard shall be maintained in accordance with paragraph (h)(1) of this section.
1910.1030(g)
Communication of Hazards to Employees --
1910.1030(g)(1)
Labels and Signs --
1910.1030(g)(1)(i)
Labels.
1910.1030(g)(1)(i)(A)
Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers

containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials, except as provided in paragraph (g)(1)(i)(E), (F) and (G).

1910.1030(g)(1)(i)(B)

Labels required by this section shall include the following legend:

1910.1030(g)(1)(i)(C)

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

1910.1030(g)(1)(i)(D)

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

1910.1030(g)(1)(i)(E)

Red bags or red containers may be substituted for labels.

1910.1030(g)(1)(i)(F)

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

1910.1030(g)(1)(i)(G)

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

1910.1030(g)(1)(i)(H)

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

1910.1030(g)(1)(i)(I)

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

1910.1030(g)(1)(ii)
Signs.
1910.1030(g)(1)(ii)(A)
The employer shall post signs at the entrance to work areas specified in paragraph (e), HIV and HBV Research Laboratory and Production Facilities, which shall bear the following legend:

(Name of the Infectious Agent)
(Special requirements for entering the area)
(Name, telephone number of the laboratory director or other responsible person.)
1910.1030(g)(1)(ii)(B)
These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.
1910.1030(g)(2)
Information and Training.
1910.1030(g)(2)(i)
Employers shall ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.
1910.1030(g)(2)(ii)
Training shall be provided as follows:
1910.1030(g)(2)(ii)(A)
At the time of initial assignment to tasks where occupational exposure may take place;
1910.1030(g)(2)(ii)(B)
At least annually thereafter.
1910.1030(g)(2)(iii)
[Reserved]
1910.1030(g)(2)(iv)
Annual training for all employees shall be provided within one year of their previous training.
1910.1030(g)(2)(v)
Employers shall provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.
1910.1030(g)(2)(vi)
Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.
1910.1030(g)(2)(vii)
The training program shall contain at a minimum the following elements:
1910.1030(g)(2)(vii)(A)
An accessible copy of the regulatory text of this standard and an explanation of its contents;
1910.1030(g)(2)(vii)(B)
A general explanation of the epidemiology and symptoms of bloodborne diseases;
1910.1030(g)(2)(vii)(C)
An explanation of the modes of transmission of bloodborne pathogens;
1910.1030(g)(2)(vii)(D)
An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;
1910.1030(g)(2)(vii)(E)

An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
1910.1030(g)(2)(vii)(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;
1910.1030(g)(2)(vii)(G)
Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;
1910.1030(g)(2)(vii)(H)
An explanation of the basis for selection of personal protective equipment;
1910.1030(g)(2)(vii)(I)
Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
1910.1030(g)(2)(vii)(J)
Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
1910.1030(g)(2)(vii)(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;
1910.1030(g)(2)(vii)(L)
Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;
1910.1030(g)(2)(vii)(M)
An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and
1910.1030(g)(2)(vii)(N)
An opportunity for interactive questions and answers with the person conducting the training session.
1910.1030(g)(2)(viii)
The person conducting the training shall be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.
1910.1030(g)(2)(ix)
Additional Initial Training for Employees in HIV and HBV Laboratories and Production Facilities. Employees in HIV or HBV research laboratories and HIV or HBV production facilities shall receive the following initial training in addition to the above training requirements.
1910.1030(g)(2)(ix)(A)
The employer shall assure that employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility before being allowed to work with HIV or HBV.
1910.1030(g)(2)(ix)(B)
The employer shall assure that employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV.
1910.1030(g)(2)(ix)(C)
The employer shall provide a training program to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents. A progression of work activities shall be assigned as techniques are learned and proficiency is developed. The employer shall assure that employees participate in work activities involving infectious agents only after proficiency has been demonstrated.
1910.1030(h)
Recordkeeping --
1910.1030(h)(1)
Medical Records.
1910.1030(h)(1)(i)
The employer shall establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.
1910.1030(h)(1)(ii)
This record shall include:
1910.1030(h)(1)(ii)(A)
The name and social security number of the employee;

1910.1030(h)(1)(ii)(B)
A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by paragraph (f)(2);
1910.1030(h)(1)(ii)(C)
A copy of all results of examinations, medical testing, and follow-up procedures as required by paragraph (f)(3);
1910.1030(h)(1)(ii)(D)
The employer's copy of the healthcare professional's written opinion as required by paragraph (f)(5); and
1910.1030(h)(1)(ii)(E)
A copy of the information provided to the healthcare professional as required by paragraphs (f)(4)(ii)(B)(C) and (D).
1910.1030(h)(1)(iii)
Confidentiality. The employer shall ensure that employee medical records required by paragraph (h)(1) are:
1910.1030(h)(1)(iii)(A)
Kept confidential; and
1910.1030(h)(1)(iii)(B)
Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.
1910.1030(h)(1)(iv)
The employer shall maintain the records required by paragraph (h) for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.
1910.1030(h)(2)
Training Records.
1910.1030(h)(2)(i)
Training records shall include the following information:
1910.1030(h)(2)(i)(A)
The dates of the training sessions;
1910.1030(h)(2)(i)(B)
The contents or a summary of the training sessions;
1910.1030(h)(2)(i)(C)
The names and qualifications of persons conducting the training; and
1910.1030(h)(2)(i)(D)
The names and job titles of all persons attending the training sessions.
1910.1030(h)(2)(ii)
Training records shall be maintained for 3 years from the date on which the training occurred.
1910.1030(h)(3)
Availability.
1910.1030(h)(3)(i)
The employer shall ensure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.
1910.1030(h)(3)(ii)
Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, to employee representatives, to the Director, and to the Assistant Secretary.
1910.1030(h)(3)(iii)
Employee medical records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, to the Director, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.
1910.1030(h)(4)
Transfer of Records.
1910.1030(h)(4)(i)
The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).
1910.1030(h)(4)(ii)

If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director, if required by the Director to do so, within that three month period.

1910.1030(h)(5)

Sharps injury log.

1910.1030(h)(5)(i)

The employer shall establish and maintain a sharps injury log for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. The sharps injury log shall contain, at a minimum:

1910.1030(h)(5)(i)(A)

The type and brand of device involved in the incident,

1910.1030(h)(5)(i)(B)

The department or work area where the exposure incident occurred, and

1910.1030(h)(5)(i)(C)

An explanation of how the incident occurred.

1910.1030(h)(5)(ii)

The requirement to establish and maintain a sharps injury log shall apply to any employer who is required to maintain a log of occupational injuries and illnesses under 29 CFR 1904.

1910.1030(h)(5)(iii)

The sharps injury log shall be maintained for the period required by 29 CFR 1904.6.

1910.1030(i)

Dates --

1910.1030(i)(1)

Effective Date. The standard shall become effective on March 6, 1992.

1910.1030(i)(2)

The Exposure Control Plan required by paragraph (c) of this section shall be completed on or before May 5, 1992.

1910.1030(i)(3)

Paragraph (g)(2) Information and Training and (h) Recordkeeping shall take effect on or before June 4, 1992.

1910.1030(i)(4)

Paragraphs (d)(2) Engineering and Work Practice Controls, (d)(3) Personal Protective Equipment, (d)(4) Housekeeping, (e) HIV and HBV Research Laboratories and Production Facilities, (f) Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up, and (g)(1) Labels and Signs, shall take effect July 6, 1992.

[56 FR 64004, Dec. 06, 1991, as amended at 57 FR 12717, April 13, 1992; 57 FR 29206, July 1, 1992; 61 FR 5507, Feb. 13, 1996; 66 FR 5325 Jan., 18, 2001; 71 FR 16672 and 16673, April 3, 2006]

EXPOSURE CONTROL PLAN

This program applies to all occupational exposures to blood or other infectious materials encountered by personnel employed by _____.

1. Exposure Determination

   Employees with potential occupational exposure at this work site are all employees as first aid responders (first aid team members). List of employees and duties are attached.

   Exposure would be likely to occur during administering first aid in the treatment of injuries.

2. Infection Control

   a. This plan shall be reviewed annually and changes made as practices and new health information becomes available. It will be the responsibility of the Safety Department to monitor the continued effectiveness of this program.

   b. First Aid Team shall adhere to the following Engineering and Work Practices:

      1.) Employees will wash their hands immediately after removing protective equipment or after contact with blood or other potential infectious materials. Hand washing facilities are available in the facility, where antiseptics are available.

      2.) All protective equipment shall be removed immediately after leaving the treatment area and placed in containers for storage, washing, decontamination, or disposal.

      3.) Used sharps shall not be sheared, bent, broken, recapped, or re-sheathed by hand. They are to be disposed of in the red sharps container in the facility. If sharp container ever gets blood on outside, it will need to be bagged.

      4.) Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a potential for occupational exposure.

      5.) Food and drink shall not be stored in refrigerators or cabinets where potential infectious materials may be present.

      6.) All procedures involving blood or other potential infectious material shall be performed in such a manner as to minimize splashing, spraying or aerosolization of these substances.

      7.) Mouth pipetting/suctioning is prohibited.

      8.) Blood contamination equipment must be thoroughly decontaminated.

   c. Personal Protective Equipment

Universal Precautions is a system of infectious disease control which assumes that every direct contact with body fluids is infectious and requires every employee exposed to direct contact to be protected as though those fluids are contaminated with HIV and HBV. We use the Blood/Bodily Fluid Clean-Up Kits. Please use as directed in the kit. Use the latex gloves cuffed to avoid drips. Dispose the Red Biohazard Bags in the Biological Hazard Container in the container by the First Aid Cabinet.

1.) All personal protective equipment required by this program shall be provided by the employer. The reason that the personal protective equipment was chosen to use was the ability to protect the person using it. The containers are compact and convenient to use.

2.) The Safety Department shall assure that appropriate personal protective equipment the appropriate size is readily accessible at the work site. Hypoallergenic gloves shall be readily available if required by any employee.

3.) Human Resources shall provide the cleaning, or disposal of all personal protective equipment.

4.) The Safety Department shall repair or replace required personal equipment as needed to maintain its effectiveness.

5.) Gloves shall be worn when the employee has the potential for the hands to have direct skin contact with blood, other potentially infectious material, mucous membranes, non-intact skin and when handling surfaces soiled with blood or other potentially infectious material.

6.) Only disposable (single use) gloves shall be used in this facility.

7.) Full face shields or eye protection and face masks shall be worn whenever splashes, spray, splatter, droplets, or aerosols of blood or other potentially infectious material may be generated and there is a potential for eye, nose, or mouth contamination.

8.) Gowns, aprons, and other protective body equipment shall be worn when the employee has a potential for occupational exposure.

9.) Vinyl aprons shall be worn if there is a potential for splashing or spraying of blood or other potentially infectious materials.

10.) Surgical caps of hoods shall be worn if there is a potential for splashing or splattering of blood or other potentially infectious materials on the head.

11.) Fluid-proof shoe covers shall be worn if there is a potential for shoes to become contaminated and/or soaked with blood or other potentially infectious material.

12.) Any employee refusing to use personal protection equipment may be subject to disciplinary action.

d. All covered employees shall follow the cleaning and disinfecting procedures listed:

1.) All equipment and environmental and working surfaces shall be properly cleaned and disinfected after contact with blood or other potentially infectious material. This cleaning will be accomplished immediately after treatment is completed, and will only be done by a member of the first aid team.

2.) Broken glassware which may have been contaminated shall not be picked up directly by hand. A mechanical means shall be used such as a broom and dust-pan. These tools will then be cleaned properly or removed from service.

3.) Reusable items contaminated with blood or other potentially infectious material shall be decontaminated prior to washing and/or reprocessing.

e. Infectious Waste Disposal

1.) All infectious waste destined for disposal shall be placed in closeable, leak-proof containers or bags that is red and has a biohazard label.

2.) Disposal of all infectious waste shall be accordance with appropriate federal, state, or local regulation.

3.) Immediately after use, sharps shall be disposed of in closeable, puncture resistant, disposable containers which are leak-proof on the sides and bottom, and that are labeled or color coded. These containers shall be readily accessible and located in the immediate area of use. These containers shall be replaced routinely and not allowed to overfill.

f. Hepatitis B Vaccination and Post Exposure Follow-up

1.) The employer shall make available hepatitis B vaccination to all employees who have occupational exposure.

2.) Medical evaluations and procedures will be performed by a licensed physician and all laboratory tests will be performed by an accredited laboratory.

3.) Evaluations, procedures, vaccinations, and post-exposure management will be provided to the employee at a reasonable time and place at no cost.

g. HBV Vaccination

1.) HBV vaccinations will be offered to all employees occupationally exposed, unless the employee had a previous HBV vaccination or unless antibody testing has revealed that the employee is immune. Booster doses will be provided according to standard recommendations.

2.) HBV antibody testing shall be made available to an employee who desires such testing prior to deciding whether or not to receive HBV vaccination. If not, must sign statement attached.

h. Post Exposure Evaluation and Follow-up

1.) Following a report of an exposure incident, Human Resources shall make available to each employee exposed, a confidential medical evaluation and follow-up including at least the following elements:

a.) Documentation of the route(s) of exposure, HBV and HIV antibody status of source patient(s) (if known) circumstances under which exposure occurred.

b.) If the source patient can be determined and permission obtained, collection of and testing of the source patient's blood to determine the presence of HIV or HBV infection.

c.) Collect blood from the exposed employee as soon as possible after exposure incident for determination of HIV and/or HBV status. The employee may request testing of the blood or serum sample be done at a later date and time.

d.) A follow-up of the exposed employees including antibody or antigen testing, counseling, exposure prophylaxis, shall be conducted according to standard recommendations for medical practices.

2.) The Human Resource Department shall provide to the evaluating physician the following information.

a.) A copy of this plan and OSHA Standard 29 CFR 1910.1030 and its appendices.

b.) A description of the affected employee's duties as they relate to the employee's occupational exposure.

c.) Conditions and circumstances of the exposure.

3.) For each evaluation under this plan, the employer shall obtain and provide the employee with a copy of the evaluating physician's written opinion within 15 days of the completion of the evaluation. The written opinion shall be limited to the following information.

a.) The physician's recommended limitations upon the employee's ability to receive hepatitis B vaccination.

b.) A statement that the employee has been informed of the medical evaluation and that the employee has been told about any medical

conditions resulting from exposure to blood or other potentially infectious material which require further medical treatment.

c.) Specific findings or diagnoses, which are related to the employee's ability to receive HBV vaccination. Any other findings and diagnoses shall remain confidential.

3. Medical Record Keeping

a. Medical records required by this plan shall be maintained in accordance with paragraph 5 of this plan.

4. Communication of Hazards to Employees

a. Signs and Labels

1.) A warning label shall be affixed to containers of infectious waste. The label required shall include the legend "BIOHAZARD".

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

3.) These labels shall be an integral part of the container or shall be affixed as close as possible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

4.) Red bags or containers may be substituted for labels on containers of infectious waste.

b. Information and Training

Human Resources shall provide all employees, with an occupational exposure-training program at no cost to the employee and during working hours.

1.) All employees with an occupational exposure shall participate in a training program.
2.) Training shall be provided at the time of initial employment and annually thereafter.
3.) Materials appropriate in content and vocabulary to educational level, literacy, and language background of employees shall be used.

4.) The training program shall consist of the following elements:

a.) A copy of 29 CFR 1910.1030 and this plan.

b.) A general explanation of the epidemiology and symptoms of blood borne diseases.

Bloodborne pathogens-micro-organisms found in blood, blood products and other body fluids can transmit viruses such as hepatitis B, (HBV), and the human immunodeficiency virus, (HIV).

HBV, means “inflammation of the liver”, symptoms include: flu-like symptoms or no symptoms, your blood, saliva and other body fluids may be infectious.

HIV, attacks the body’s immune system, causing AIDS (Acquired Immune Deficiency Syndrome). It may carry virus without developing symptoms for years, or it could have flu-like symptoms, fever, diarrhea and fatigue.

Workplace transmission is caused by body fluids or accidental injury with a sharp object contaminated with infectious material. Anything that can pierce, puncture or cut your skin can cause workplace transmission. Open cuts, nicks, skin abrasions, dermatitis, acne, even mucous membranes of the mouth, eyes or nose can be a form of transmission. Another form of transmission is indirect transmission such as touching a contaminated object or surface and transferring the infectious material to mouth, eyes, nose or open skin. HBV can survive on environmental surfaces dried and at room temperature for at least one week.

c.) An explanation of the modes of transmission of bloodborne pathogens.

d.) An explanation of this program.

e.) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials. Available at Human Resources Department.

f.) An explanation of the use and limitations of practices that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment. As described in this plan.

g.) Information on the types, proper use, location, selection, removal, handling, decontamination and/or disposal of personal protective equipment.

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

i.) Information on hepatitis B vaccine, including its efficacy, safety, and the benefits of being vaccinated.

In 1981 a vaccine was licensed for use in preventing HBV, it’s prepared from human blood plasma who have high titers of antibodies against hepatitis B surface antigen. It is used to vaccinate persons who are at high risk of coming in contact with persons who are carriers of hepatitis B or with blood or fluids from such persons. Newkirk Novak

must make available the vaccination to all employees who have occupational exposure, free of charge.

j.) Information on appropriate actions to take and persons to contact in an Emergency. The employee will need to see the Human Resource department when exposed to blood or other potentially infectious materials. When treating wounds and doing CPR use the universal precautions and wash hands immediately after removing protective equipment or contact with blood or other potential infectious materials.

k.) An explanation of procedures to follow if an incident occurs, including the method of reporting the incident and the medical follow-up that will be made available. Also information on the medical counseling that employer is providing for exposed individuals.

l.) An explanation of the signs and labels and/or color coding required by this plan. A warning label shall be affixed to each container of infectious waste, "BIOHAZARD". The label shall be florescent orange with contrasting lettering. Red bags may be substituted for labels.

m.) Training will also include a time for questions and answers. Questions answered anytime by the plant nurse, in person, phone or by letter.

5. Record Keeping

a. Human Recourses shall establish and maintain an accurate record for each employee subject to Paragraph 1 of this pan and in accordance with 29 CFR 1910.20.

b. These records shall include:

1.) The name and social security number of the employee.

2.) A copy of the employee's hepatitis B vaccination records and medical records relative to the employees ability to receive vaccination or the circumstances of an exposure incident.

3.) A copy of all results of physical examinations, medical testing, and follow-up procedures as they relate to the employee's ability to receive vaccination to post exposure evaluation following an exposure incident.

4.) The employer's copy of the physician's written opinion.

5.) A copy of the information provided to the physician as required by Paragraph 1 (i) 2

6.) Confidentiality. The employer shall assure that employee medical records required by Paragraph 1 of this plan are:

a.) Kept confidential.

b.) Not disclosed or reported to any person within or outside the workplace except as required by this section or as may be required by law.

7.) Records will be maintained for at least the duration of employment plus 30 years.

c. Training Records

1.) Training records shall contain the following information.

a.) The dates of the training sessions.

b.) The contents or the summary of the training sessions.

c.) The names of the persons conducting the training.

d.) The names and duties of all persons attending the training sessions.

2.) Training records will be maintained for 5 years.

d. Availability

1.) All records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.

2.) Employee training records required by this paragraph shall be provided upon request for examination and copying to employees, employee representative, and the Assistant Secretary, in accordance with 29 CFR 1910.20.

3.) Employee medical and training records required by this paragraph shall be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, and to the Assistant Secretary in accordance with 29 CFR 1910.20.

e. Transfer of Records

1.) The employer shall comply with the requirements of 29 CFR 1910.20 in the transfer of records.

2.) If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director (Director of the National Institute of Occupational Safety and Health, U.S. Department of Health and Human Services, or designated representative) at least three months prior to disposal and transmit them to the Director if required by the Director to do so within a three month period.

Reviewed By: _____ Date: _____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 169 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Cadmium Awareness Program

Purpose
The purpose of this cadmium awareness program is to help ensure Newkirk Novak employees and subcontractors worker exposure levels to cadmium are accurately assessed, and workers are not exposed to cadmium at levels that are above the Permissible Exposure Limit (PEL) of 5 micrograms per cubic meter (ug/m3).

Scope
This document applies to all employees that may be occupationally exposed to cadmium.

Responsibilities

Introduction
Cadmium is a natural element in the earth's crust. It is usually found as a mineral combined with other elements such as oxygen (cadmium oxide), chlorine (cadmium chloride), or sulfur (sulfate, cadmium sulfide). It doesn't have a definite taste or odor.

Cadmium exerts toxic effects on the kidney, the skeletal system and the respiratory system and is classified as a human carcinogen. It is generally present in the environment at low levels; however, human activity has greatly increased those levels. Cadmium can travel long distances from the source of emission by atmospheric transport. Human exposure occurs mainly from consumption of contaminated food, active and passive inhalation of tobacco smoke and inhalation by workers in the non-ferrous metal industry.

Procedure
1.0 Exposure of Cadmium

1.1 Cadmium is used frequently as a rust-preventive coating on steel and also as an alloying element. Acute exposures to high concentrations of cadmium fumes can produce sever lung irritation. Long-term exposure to low levels of cadmium in air can result in emphysema (a disease affecting the ability of the lung to absorb oxygen) and can damage the kidneys.

1.2 Cadmium fumes or fine dust are capable of causing serious injury or death when inhaled. It is easy to mistake cadmium-plated steel for galvanized steel. However, when heated, cadmium leaves an olive-drab color as it oxidizes. Always know the metal you are working with. Cadmium oxide fumes often cause no symptoms until a few hours after exposure.

1.3 Cadmium can be released to the environment in a number of ways, including:
Natural activities, such as volcanic activity (both on land and in the deep sea), weathering and erosion, and river transport;
human activities, such as tobacco smoking, mining, smelting and refining of non-ferrous metals,6 fossil fuel combustion, incineration of municipal waste (especially cadmium-containing batteries and plastics), manufacture of phosphate fertilizers, and recycling of cadmium-plated steel scrap and electric and electronic waste;
remobilization of historic sources, such as the contamination of watercourses by drainage water from metal mines.

1.4 Cadmium releases can be carried to and deposited on areas remote from the sources of emission by means of long-range atmospheric transport.

The tobacco plant naturally accumulates relatively high concentrations of cadmium in its leaves. Thus, smoking tobacco is an important source of exposure, and the daily intake may exceed that from food in the case of heavy smokers. Cigarette smoking can cause significant increases in the concentrations of cadmium in the kidney, the main target organ for cadmium toxicity.

2.0 Health Effects

2.1 The kidney is the critical target organ. Cadmium accumulates primarily in the kidneys, and its biological half-life in humans is 10–35 years. This accumulation may lead to renal tubular dysfunction, which results in increased excretion of low molecular weight proteins in the urine. This is generally irreversible. High intake of cadmium can to disturbances in calcium metabolism and the formation of kidney stones. Softening of the bones and osteoporosis may occur in those exposed through living or working in cadmium contaminated areas.

2.2 High inhalation exposure to cadmium oxide fume results in acute pneumonitis with pulmonary oedema, which may be lethal. Long-term, high-level occupational exposure is associated with lung changes, primarily characterized by chronic obstructive airway disease. There is sufficient evidence that long-term occupational exposure to cadmium (e.g. through cadmium fume) contributes to the development of lung cancer. There is limited evidence that cadmium may also cause cancers of the kidney and prostate. The International Agency for Research on Cancer (IARC) has classified cadmium and cadmium compounds as carcinogenic to humans (Group 1), meaning that there is sufficient evidence for their carcinogenicity in humans.

3.0 Engineering & Work Practices Controls

3.1 To protect workers, exposure to cadmium must be reduced to the permissible exposure limit or below. Engineering and work practice controls are the primary means used to reduce exposure. Examples of engineering controls include substituting a less toxic material for cadmium. Also, isolating the source of exposure with barriers and reducing the hazard with ventilation and exhaust systems are examples of engineering controls.

3.2 If engineering and work practice controls do not sufficiently reduce exposure, then appropriate respirators must be used to further reduce employee exposure to the permissible exposure limit or below.

4.0 Protective Clothing & Equipment

4.1 You will be supplied with protective clothing and equipment if skin or eye contact with cadmium is likely. Be sure you know precisely what protection is needed for each

job task you perform and be sure you wear it. Simple tasks may only require gloves for adequate protection while others may require a higher level of protection.

5.0 Importance of Proper Housekeeping

5.1 When dealing with cadmium, proper housekeeping is critical to minimize exposure. Cadmium that settles on ledges, equipment, floors and other surfaces should be removed as soon as possible to prevent it from becoming airborne and to minimize the risk of skin contact. Clean surfaces contaminated with Cadmium with a HEPA-filtered vacuum or by wet sweeping or wet scrubbing. Dry brushing, sweeping and using compressed air are usually prohibited because they disperse cadmium into the air.

6.0 Responding to Exposures

6.1 Despite our best efforts, cadmium may come in contact with our skin or eyes. It's important to know what to do if this occurs. If cadmium comes into contact with the skin, go to an approved washing facility to cleanse any areas where skin contact has occurred. When there is substantial contact, the area should be washed with mild soap and water. If cadmium contacts your eyes, get to an eyewash station as soon as possible and flush your eyes for at least 15 minutes with a steady stream of water. You will need a prompt examination by a physician after flushing your eyes to determine the need for additional treatment.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 128 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Cold Stress

Purpose
To inform and protect employees working in cold weather conditions

Scope
As the weather becomes "frightful" during winter months, workers who must brave the outdoor conditions face the occupational hazard of exposure to the cold. Prolonged exposure to freezing temperatures can result in health problems as serious as trench foot, frostbite, and hypothermia. Workers in such industries as construction, commercial fishing and agriculture need to be especially mindful of the weather, its effects on the body, proper prevention techniques, and treatment of cold-related disorders.

Responsibilities
The Superintendent is responsible when low temperatures, wind, and job condition may impact employee health.

Special Definitions

Procedure
1.0 THE COLD ENVIRONMENT

1.1 An individual gains body heat from food and muscular activity and loses it through convection, conduction, radiation and sweating to maintain a constant body temperature. When body temperature drops even a few degrees below its normal temperature of 98.6°F (37°C), the blood vessels constrict, decreasing peripheral blood flow to reduce heat loss from the surface of the skin. Shivering generates heat by increasing the body's metabolic rate.

1.2 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 (-11°C)! A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

2.0 MAJOR RISK FACTORS FOR COLD-RELATED STRESSES

2.1 Wearing inadequate or wet clothing increases the effects of cold on the body

2.2 Taking certain drugs or medications such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to the cold or impairs judgment

2.3 Having a cold or certain diseases, such as diabetes, heart, vascular, and thyroid problems, may make a person more susceptible to the winter elements

2.4 Being a male increases a person's risk to cold-related stresses. Sad, but true, men experience far greater death rates due to cold exposure than women, perhaps due to inherent risk-taking activities, body-fat composition or other physiological differences.

2.5 Becoming exhausted or immobilized, especially due to injury or entrapment, may speed up the effects of cold weather

2.6 Aging -- the elderly are more vulnerable to the effects of harsh winter weather

3.0 HARMFUL EFFECTS OF THE COLD

3.1 Trench Foot

3.1.1 Trench Foot is caused by long, continuous exposure to a wet, cold environment, or actual immersion in water. Commercial fisherman, who experiences these types of cold, wet environments daily, need to be especially cautious.

3.1.2 Symptoms include a tingling and/or itching sensation, burning, pain, and swelling, sometimes forming blisters in more extreme cases.

3.1.3 Move individuals with trench foot to a warm, dry area, where the affected tissue can be treated with careful washing and drying, re-warming and slight elevation. Seek medical assistance as soon as possible.

3.2 Frostbite

3.2.1 Frostbite occurs when the skin tissue actually freezes, causing ice crystals to form between cells and draw water from them, which leads to cellular dehydration. Although this typically occurs at temperatures below 30°F (-1°C), wind chill effects can cause frostbite at above-freezing temperatures.

3.2.2 Initial effects of frostbite include uncomfortable sensations of coldness; tingling, stinging or aching feeling of the exposed area followed by numbness. Ears, fingers, toes, cheeks, and noses are primarily affected. Frostbitten areas appear white and cold to the touch. The appearance of frostbite varies depending on whether re-warming has occurred.

3.2.3 Deeper frostbite involves freezing of deeper tissues (muscles, tendons, etc.) causing exposed areas to become numb, painless, hard to the touch.

3.2.4 If you suspect frostbite, you should seek medical assistance immediately. Any existing hypothermia should be treated first (See Hypothermia below). Frostbitten parts should be covered with dry, sterile gauze or soft, clean cloth bandages. Do not massage frostbitten tissue because this sometimes causes greater injury. Severe cases may require hospitalization and even amputation of affected tissue. Take measures to prevent further cold injury. If formal medical treatment will be delayed, consult with a licensed health care professional for training on re-warming techniques.

3.3 General Hypothermia

3.3.1 General Hypothermia occurs when body temperature falls to a level where normal muscular and cerebral functions are impaired. While hypothermia is generally associated with freezing temperatures, it may occur in any climate where a person's

body temperature falls below normal. For instance, hypothermia is common among the elderly who live in cold houses.

3.3.2 The first symptoms of hypothermia, shivering, an inability to do complex motor functions, lethargy, and mild confusion, occur as the core body temperature decreases to around 95°F (35°C).

3.3.3 As body temperature continues to fall, hypothermia becomes more severe. The individual falls into a state of dazed consciousness, failing to complete even simple motor functions. The victim's speech becomes slurred and his or her behavior may become irrational.

3.3.4 The most severe state of hypothermia occurs when body temperature falls below 90°F (32°C). As a result, the body moves into a state of hibernation, slowing the heart rate, blood flow, and breathing. Unconsciousness and full heart failure can occur in the severely hypothermic state.

3.3.5 Treatment of hypothermia involves conserving the victim's remaining body heat and providing additional heat sources. Specific measures will vary depending upon the severity and setting (field or hospital). Handle hypothermic people very carefully because of the increased irritability of the cold heart. Seek medical assistance for persons suspected of being moderately or severely hypothermic.

3.3.6 If the person is unresponsive and not shivering, assume he or she is suffering from severe hypothermia. Reduction of heat loss can be accomplished by various means: obtaining shelter, removal of wet clothing, adding layers of dry clothing, blankets, or using a pre-warmed sleeping bag.

3.3.7 For mildly hypothermic cases or those more severe cases where medical treatment will be significantly delayed, external re-warming techniques may be applied. This includes body-to-body contact (e.g., placing the person in a pre-warmed sleeping bag with a person of normal body temperature), chemical heat packs, or insulated hot water bottles. Good areas to place these packs are the armpits, neck, chest, and groin. It is best to have the person lying down when applying external re-warming. You also may give mildly hypothermic people warm fluids orally, but avoid beverages containing alcohol or caffeine.

4.0 PREVENTING COLD RELATED DISORDERS

4.1 Personal Protective Clothing is perhaps the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing:

4.1.1 An outer layer to break the wind and allow ventilation (like Gore-Tex® or nylon)

4.1.2 A middle layer of wool or synthetic fabric (Qualofil 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.

4.1.3 An inner layer of cotton or synthetic weave to allow ventilation

4.2 Pay special attention to protecting feet, hands, face and head. Up to 40 percent 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.

5.0 ENGINEERING CONTROLS

5.1 Engineering Controls in the workplace through a variety of practices help reduce the risk of cold-related injuries.
5.2 Use an on-site source of heat, such as air jets, radiant heaters, or contact warm plates.
5.3 Shield work areas from drafty or windy conditions.
5.4 Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20°F (-6°C) or less.
5.5 Use thermal insulating material on equipment handles when temperatures drop below 30°F (-1°C).

6.0 SAFE WORK PRACTICES

6.1 Safe Work Practices, such as changes in work schedules and practices, are necessary to combat the effects of exceedingly cold weather.
6.2 Allow a period of adjustment to the cold before embarking on a full work schedule.
6.3 Always permit employees to set their own pace and take extra work breaks when needed.
6.4 Reduce, 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.
6.5 Ensure that employees remain hydrated.
6.6 Establish a buddy system for working outdoors.
6.7 Educate employees to the symptoms of cold-related stresses -- heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, or euphoria.

7.0 The quiet symptoms of potentially deadly cold-related ailments often go undetected until the victim's health is endangered. Knowing the facts on cold exposure and following a few simple guidelines can ensure that this season is a safe and healthy one.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 137 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Combustible Dust

Purpose
Work practices and guidelines that reduce the potential for a combustible dust explosion

Scope
All employees

Responsibilities
Managers and Supervisors are responsible for developing and enforcing a prevention and protection plan tailored to the operation of the facility.

Special Definitions
Combustible dust is "Any finely divided solid material that is 420 microns or smaller in diameter (material passing a U.S. No. 40 Standard Sieve) and presents a fire or explosion hazard when dispersed and ignited in air" as defined by NFPA 654.

Combustible dusts are solids finely ground into fine particles, fibers, chips, chunks or flakes that can cause a fire or explosion when suspended in air under certain conditions. Types of dusts include metal (aluminum and magnesium), wood, plastic or rubber, coal, flour, sugar and paper, among others.

Combustible dust explosion hazards may exist in a variety of industries, including: food (e.g., candy, sugar, spice, starch, flour, feed), grain, tobacco, plastics, wood, paper, pulp, rubber, furniture, textiles, pesticides, pharmaceuticals, dyes, coal, metals (e.g., aluminum, chromium, iron, magnesium, and zinc), and fossil fuel power generation.

Procedure
1.0 FACILITY DUST HAZARD ASSESSMENT
- **1.1** Facility Analysis Components
  - **1.1.1** Facilities should carefully identify the following in order to assess their potential for dust explosions:
    - **1.1.1.1** Materials that can be combustible when finely divided
    - **1.1.1.2** Processes which use, consume, or produce combustible dusts
    - **1.1.1.3** Open areas where combustible dusts may build up
    - **1.1.1.4** Hidden areas where combustible dusts may accumulate
    - **1.1.1.5** Means by which dust may be dispersed in the air
    - **1.1.1.6** Potential ignition sources

1.2 Dust Combustibility

1.2.1 Different dusts of the same chemical material will have different ignitability and explosibility characteristics, depending upon many variables such as particle size, shape, and moisture content. Additionally, these variables can change while the material is passing through process equipment. For this reason, published tables of dust explosibility data may be of limited practical value. In some cases, dusts will be combustible even if the particle size is larger than that specified in the NFPA definition, especially if the material is fibrous.

1.2.2 Industrial settings may contain high-energy ignition sources such as welding torches. In these situations, test methods for dust ignition and explosion characteristics from ASTM International (originally the American Society for Testing and Materials) would be of value in the assessment process.

1.3 Electrical Classification

1.3.1 The facility analysis must identify areas requiring special electrical equipment classification due to the presence (or potential presence) of combustible dust. The OSHA Electrical standard (29 CFR Part 1910 Subpart S) contains general requirements for electrical installations in hazardous areas. Detailed requirements for equipment and wiring methods are in NFPA 70, the *National Electrical Code*

1.3.2 The overall dust hazard designation for electrical requirements is Class II. This is further broken down into Divisions which represent the probability of dust being present at any given time. Additionally, each dust is assigned a group (E, F, or G), representing the dust types (metal, carbonaceous, and other, respectively) with different properties. For instance, group E dusts are electrically conductive and electric current can pass through a layer of such dust under favorable circumstances, causing short circuits or arcs.

1.4 Other Hazard Analysis Considerations

1.4.1 The amount of dust accumulation necessary to cause an explosive concentration can vary greatly. This is because there are so many variables – the particle size of the dust, the method of dispersion, ventilation system modes, air currents, physical barriers, and the volume of the area in which the dust cloud exists or may exist. The hazard analysis should be tailored to the specific circumstances in each facility and the full range of variables affecting the hazard.

1.4.2 Many locations need to be considered in an assessment. One obvious place for a dust explosion to initiate is where dust is concentrated. In equipment such as dust collectors, a combustible mixture could be present whenever the equipment is operating. Other locations to consider are those where dust can settle, both in occupied areas and in hidden concealed spaces. A thorough analysis will consider all possible scenarios in which dust can be disbursed, both in the normal process and potential failure modes.

2.0 DUST CONTROL

2.1 Guidelines for the control of dusts to prevent explosions:

2.1.1 Minimize the escape of dust from process equipment or ventilation systems

2.1.2 Use dust collection systems and filters

2.1.3 Utilize surfaces that minimize dust accumulation and facilitate cleaning

2.1.4 Provide access to all hidden areas to permit inspection

2.1.5 Inspect for dust residues in open and hidden areas, at regular intervals
2.1.6 Clean dust residues at regular intervals
2.1.7 Use cleaning methods that do not generate dust clouds, if ignition sources are present
2.1.8 Only use vacuum cleaners approved for dust collection
2.1.9 Locate relief valves away from dust hazard areas
2.1.10 Develop and implement a hazardous dust inspection, testing, housekeeping, and control program

3.0 IGNITION CONTROL

3.1 The following are recommendations for the control of ignition sources to prevent Explosions:
3.1.1 Use appropriate electrical equipment and wiring methods
3.1.2 Control static electricity, including bonding of equipment to ground
3.1.3 Control smoking, open flames, and sparks
3.1.4 Control mechanical sparks and friction
3.1.5 Use separator devices to remove foreign materials capable of igniting combustibles from process materials
3.1.6 Separate heated surfaces from dusts
3.1.7 Separate heating systems from dusts
3.1.8 Proper use and type of industrial trucks
3.1.9 Proper use of cartridge activated tools

3.2 The use of proper electrical equipment in hazardous locations is crucial to eliminating a common ignition source. The classification of areas requiring special electrical equipment is discussed in the Facility Dust Hazard Assessment section above. Once these areas have been identified, special Class II wiring methods and equipment (such as "dust ignition-proof" and "dust-tight") must be used as required by 29 CFR 1910.307 and as detailed in NFPA 70 Article 500. It is important not to confuse Class II equipment with Class I explosion-proof equipment, as Class II addresses dust hazards, while Class I addresses gas, vapor and liquid hazards.

4.0 DAMAGE CONTROL

4.1 The following are protection methods to minimize the danger and damage from an explosion:
4.1.1 Separation of the hazard (isolate with distance)
4.1.2 Segregation of the hazard (isolate with a barrier)
4.1.3 Deflagration venting of a building, room, or area
4.1.4 Pressure relief venting for equipment
4.1.5 Provision of spark/ember detection and extinguishing systems
4.1.6 Explosion protection systems (also refer to NFPA 69, *Standard on Explosion Prevention Systems)*
4.1.7 Sprinkler systems
4.1.8 The use of other specialized suppression systems

5.0 TRAINING

5.1 Employees

5.1.1 Workers should be trained to recognize and prevent hazards associated with combustible dust.

5.1.2 Employees' training should include recognizing unsafe conditions, taking preventative action, and/or alerting management

5.1.3 All employees should be trained in safe work practices applicable to their job tasks, as well as on the overall plant programs for dust control and ignition source control

5.1.4 Workers should be trained before they start work, periodically to refresh their knowledge, when reassigned, and when hazards or processes change

5.2 Management

5.2.1 Training should include identifying how to encourage the reporting of unsafe practices and facilitate corrective actions.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 114 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Compressed Air

Purpose
To communicate the proper method when using compressed air

Scope
All employees using compressed air

Responsibilities

Special Definitions

Procedure
1.0 Only air guns with a dead-end pressure of less than 30 psi will be used at this facility. These guns are marked to indicate this limitation.

2.0 Air compressors will be drained daily to remove water.

3.0 All air compressor relief valves will be tested monthly and a record of that test will be maintained in the office.

4.0 This action is necessary for health and safety reasons and failure to comply is a violation of OSHA standards.

COMPRESSED AIR POLICY

ATTENTION: **ALL PERSONNEL**

Reference: **Compressed Air**

Only air guns with a dead-end pressure of less than 30 psi will be used at this facility. These guns are marked to indicate this limitation.

Air compressors will be drained daily to remove water.

All air compressor relief valves will be tested monthly and a record of that test will be maintained in the office.

This action is necessary for health and safety reasons and failure to comply is a violation of OSHA standards.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 127-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Confined Space for Construction

Purpose
The purpose of this program is to maintain a safe and injury/illness free workplace while working in confined spaces on construction sites. In order to comply with the federal Occupational Safety and Health Administration (OSHA) standard, this written program has been established for Newkirk Novak (hereafter referred to as "the Company"). State plan OSHA requirements may differ. All company projects and facilities are included and comply with this program.

This program will provide an overview of confined space entry program responsibilities and requirements in the role of an Entry Employer (as defined herein) when performing work on a construction site. The intent of this program is to provide the Company (in the role of Entry Employer) with plain language guide to confined space entry for construction compliance as well as a ready access reference while on the construction site.

Due to the nature of the work the Company performs, it is possible that employees may be required to enter areas or spaces defined by OSHA as "confined spaces." This program sets forth the requirements for practices and procedures to protect employees engaged in construction activities at a worksite with one or more confined spaces.

Scope
It is critical to recognize that the Confined Space Entry Program in Construction only applies to construction operations as defined by the OSHA regulation as "construction, alteration and/or repair, including painting and decorating." Federal OSHA Section 1910.12(a) further provides that OSHA's construction industry standards apply "to every employment and place of employment of every employee engaged in construction work." All other work is considered "maintenance" and when confined space entry is required when conducting maintenance, the Confined Space Entry Program for General Industry (29 CFR 1910.146) regulation applies.

(Note: All OSHA standard references are Federal OSHA standards.)

If uncertainly still exists as to the differences between the OSHA general industry standard (maintenance) and construction standard, as well as whether the work being performed is construction or maintenance, see Appendix D.

Exceptions to this program include (1) Construction work regulated by §1926 subpart P—Excavations. (2) Construction work regulated by §1926 subpart S—Underground Construction, Caissons, Cofferdams and Compressed Air. (3) Construction work regulated by §1926 subpart Y—Diving.

Responsibilities

Typically, while performing work on a construction site, the Company may serve in the role of a *Controlling Contractor* (versus a Host Employer or Entry Employer), as defined herein. In some cases, where the Company's scope of work is not as Controlling Contractor, they may serve as Host Employer or Entry Employer. The following outlines the Assignment of Responsibilities as well as guidance and recommendations pertaining to each of these roles.

> **Company Policy:** *When the scale of the project is such that Host Employer does not possess confined space entry resources and the requirements of the OSHA regulation are beyond the capability of the Company, contracting the confined space entry work to a qualified entity that has this capability is highly recommended to ensure the health and safety of the Company's workers is protected.*

The effectiveness of this program depends on **proactive engagement and communication** of construction site management and employees. Before work begins at a construction site, each employer must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

If any employer conducting work on a construction site decides that employees it directs will enter a permit space, that employer (Entry Employer) must have a written permit space program implemented at the construction site. A written program, as outlined here, must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

Interaction and information sharing with client facility representatives, general contractors and all related trade contractors is critical to this construction confined space process since hazards may be part of the jobs, tasks, and processes being completed by these multi-employer work environments. Clients may have confined spaces in their facilities or on active construction sites and it is important the Company work closely with these related organizations to identify these areas and take proper precautions.

This program (and the OSHA standard) is dependent upon the Controlling Contractor, rather than the Host Employer or Entry Employer, be the primary point of contact for information about permit spaces at the work site. The Host Employer must provide information it has about permit spaces at the work site to the Controlling Contractor, who then passes it on to the employers whose employees will enter the spaces (deemed "Entry Employers").

Likewise, Entry Employers must give the Controlling Contractor information about their entry program and hazards they encounter in the space and the Controlling Contractor passes that information on to other Entry Employers and back to the Host Employer.

The Controlling Contractor is also responsible for making sure employers outside a space know not to create hazards in the space and that Entry Employers working in a space at the same time do not create hazards for one another's workers.

Note: If there is no Controlling Contractor, the Host Employer or another employer will perform these duties; or if the Controlling Contractor owns or manages the property, then it is both a Controlling Contractor and also serves as the Host Employer.

Before entry operations begin, the Controlling Contractor must:

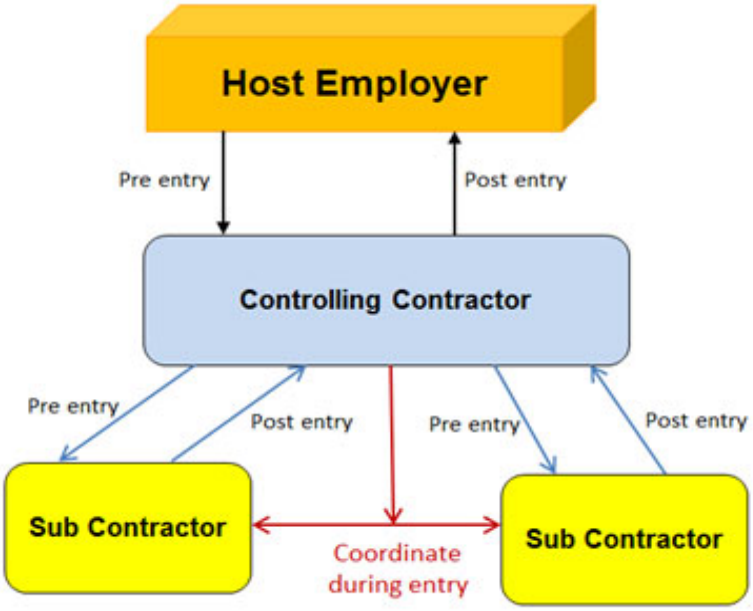
- Obtain the Host Employer's information about the permit space hazards and previous entry operations; and
- Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:
    - The information received from the Host Employer;
    - Any additional information the Controlling Contractor has about the subjects the Host Employer is responsible for listed above; and
    - The precautions that the Host Employer, Controlling Contractor, or other Entry Employers implemented for the protection of employees in the permit spaces.

If the workplace contains one or more permit spaces, the Host Employer responsibilities include:

- Before entry operations begin, the Host Employer must provide the following information, if it has it, to the Controlling Contractor:

    - The location of each known permit space and inform exposed employees by posting signs reading "DANGER – PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER" providing sufficient notification of the existence and location of, and danger posed by each permit space.
    - Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and Controlling Contractor of the existence and location of, and the danger posed by, each permit space.
    - The hazards or potential hazards in each space or the reason it is a permit space; and
    - Any precautions that the Host Employer or any previous Controlling Contractor or Entry Employer implemented for the protection of employees in the permit space.

The following diagram should help to illustrate this flow of communication requirements, their assigned responsibilities within this program and the critical relationships between these key roles.



The Company _____ is responsible for:

- Providing oversight and technical support,
- Securing the resources necessary to implement this program;
- Ensuring that routine safety checks of work operations are performed;
- Conducting an annual review of this program;
- Updates (as needed) to ensure the effectiveness of the program; and,
- Ensuring that proper reporting and record keeping is executed.

The Entry Supervisor is the Company *qualified person* (such as the site supervisor, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.
Note: An entry supervisor may also serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Specifically, the Entry Supervisor is responsible for:

- Assessing the space prior to entry to determine if the space meets the characteristics of a permit-required confined space;
- Knowing space hazards including information on the mode of exposure, signs, or symptoms and consequences of exposure;
- Verifying emergency plans and specified entry conditions such as permits, tests, procedures, equipment, and availability of rescue services before allowing entry;
- Terminating entry and canceling permits when entry operations are complete or if a new condition exists;
- Taking appropriate measures to remove unauthorized entrants; and,

- Ensuring that entry operations remain consistent with the entry permit and acceptable entry conditions are maintained.

The Authorized Entrant is the properly trained employee who has been authorized by the Entry Supervisor to enter a permit space. Specifically, the Authorized Entrant is responsible for:

- Knowing the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure;
- Properly using equipment as required;
- Communicating with the Attendant during the entry so that the Attendant can monitor the status of the entry;
- Exiting from the permit space as soon as possible when ordered by the Attendant, when the entrant recognizes the warning signs or symptoms of exposure exists, when a prohibited condition exists, or when an automatic alarm is activated; and,
- Alert the Attendant immediately when a prohibited condition exists or when warning signs or symptoms of exposure exist.

The Attendant is an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the following duties:

- Is familiar with and understands the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Is aware of possible behavioral effects of hazard exposure in authorized entrants;
- Continuously maintains and ensures an accurate count of Authorized Entrants in the permit space;
- Remains outside the permit space during entry operations until relieved by another attendant; Note: Once an Attendant has been relieved by another Attendant, the relieved attendant may enter a permit space to attempt a rescue when the employer's permit space program allows attendant entry for rescue and the Attendant has been trained and equipped for rescue operations.
- Communicates with authorized entrants as necessary to assess entrant status and to alert entrants of the need to evacuate the space;
- Assesses activities and conditions inside and outside the space to determine if it is safe for entrants to remain in the space and orders the Authorized Entrants to evacuate the permit space immediately under any of the following conditions:
    - If there is a prohibited condition;
    - If the behavioral effects of hazard exposure are apparent in an authorized entrant;
    - If there is a situation outside the space that could endanger the authorized entrants; or
    - If the Attendant cannot effectively and safely perform all the duties as required under this standard;
- Summons rescue and other emergency services as soon as the Attendant determines that authorized entrants may need assistance to escape from permit space hazards;

- Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

    - Warns the unauthorized persons that they must stay away from the permit space;
    - Advises the unauthorized persons that they must exit immediately if they have entered the permit space; and
    - Informs the Authorized Entrants and the entry supervisor if unauthorized persons have entered the permit space;
- Performs non-entry rescues as specified by the employer's rescue procedure; and
- Performs no duties that might interfere with the Attendant's primary duty to assess and protect the Authorized Entrants.

General Procedures

1.0 PLANNING CONFINED SPACE ENTRIES IN CONSTRUCTION

1.1 Only properly trained employees enter confined spaces in construction

1.2 NO EMPLOYEE IS TO ENTER ANY CONFINED SPACE OR PERCEIVED CONFINED SPACE WITHOUT FIRST NOTIFYING A SUPERVISOR AND THE SUPERVISOR TAKING APPROPRIATE ACTIONS AS OUTLINED IN THIS PROGRAM.

1.3 No confined space entry shall be performed unless at least one person who has been trained and certified in basic first-aid and cardiopulmonary resuscitation (CPR) is present on-site and immediately available for the duration of the entry.

1.4 Entry Supervisors must coordinate escape equipment and procedures, as well as rescue and emergency services, with the Responsible Person prior to executing any entry. No entry shall be conducted until appropriate rescue and/or retrieval procedures have been coordinated with the Responsible Person.

1.5 Any confined space must be properly secured and protected from hazards outside of the space prior to any entry.

1.6 All entries, regardless of the type of space, must have a qualified Attendant stationed at the opening of the space who can maintain constant communication with Entrants for the duration of the entry.

1.7 The *Confined Space Entry Decision Tree* (Appendix A) can be used as a guide to determine the necessary actions prior to executing any confined space entry.

1.8 The *Confined Space Entry Permit* (Appendix B) should be completed for every confined space entry. The level of detail required on the *Confined Space Permit* depends on the size and configuration of the confined space, the work conducted inside the confined space, and the types of hazards present (or potentially present).

1.9 No space shall be entered while gasoline or diesel powered engines or equipment are operating within 50 feet of the entrance to the space.

1.10 Respiratory protection shall not be used to execute any entry where levels of O_2, LEL, CO or H_2S levels are not within acceptable entry criteria.

2.0 ATMOSPHERIC TESTING IN CONSTRUCTION

2.1 Prior to any entry, atmospheric testing shall be conducted at various levels within the space, including the lowest level within the space.

2.2 Atmospheric testing should be conducted using a calibrated multi-gas meter

2.3 The meter should be equipped with an audible alarm set to activate when measured levels are outside the range of acceptable atmospheric criteria shown above.

2.4 The atmosphere within the space must be continuously monitored unless the Entry Employer can demonstrate that equipment for continuous monitoring is not commercially available or periodic monitoring is sufficient.

2.4.1 If continuous monitoring is used, the employer must ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape.

2.4.2 If continuous monitoring is not used, periodic monitoring is required.

2.4.3 All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

2.4.4 Any employee who enters the space, or that employee's authorized representative, must be provided with an opportunity to observe the testing required by this paragraph.

2.5 If the *Confined Space Entry Permit* is used to document the entry, the intervals at which atmospheric tests are required must be determined prior to entry. The table below provides guidelines for determining the intervals of atmospheric testing; however, the Entry Supervisor and/or Entrant(s) must make the determination based on space, worksite characterizations, and the work to be performed within the space.

Test Interval	**Guideline**
Initial	Required for all entries, regardless of the type of space. Must be conducted prior to entry.
Prior to Each Entry	Required if multiple entries into the same space are required during a single shift, and no indication that more frequent testing is required. Testing must be conducted prior to each entry into the space.
Continuous	Required in all cases. Required if initial monitoring indicates any atmospheric testing parameter measured is outside the acceptable entry criteria and ventilation is required. Continuous monitoring can be conducted from outside the space or by equipping entrants with personal monitors capable of measuring all of the parameters required.

2.6 If an extension hose or tubing is required to sample the lowest level of the space, the tester must allow sufficient time for the air sample to travel through the tubing to the instrument detector, as specified in the equipment manufacturer's instruction manual.

2.7 If the *Confined Space Entry Permit* is used to document the entry, the frequency that tests are required, the tester's name, and the model, manufacturer, serial number and date of last calibration should be entered on the permit.

3.0 SPACE VENTILATION IN CONSTRUCTION

3.1 If atmospheric testing measures levels outside of the acceptable criteria range:

3.1.1 Ventilation of the space shall be provided using a positive pressure ventilator or blower equipped with a duct long enough to reach the lowest level of the space.

3.1.2 Ventilate the space for at least 15 minutes prior to retesting the atmosphere.

3.1.3 Do not enter the space until atmospheric testing results are within acceptable criteria limits.

3.2 Note: An alternate procedure for permit required confined space entry (essentially by-passing most program requirements) is allowed under the OSHA regulation at §1926.1203 (e)(2) provided that certain conditions are met including atmospheric testing and continuous forced air ventilation. Only the Company representative (competent person), in cooperation with the Company management and Controlling Contractor, can make that determination.

4.0 PROCEDURES FOR ENTERING CONFINED SPACES IN CONSTRUCTION

4.1 A *Confined Space Entry Permit* (Appendix B) should be completed for every confined space entry.

4.2 No entry permit shall extend beyond the period of one work shift. If entries are required for multiple days, complete a separate permit for each day an entry will occur.

4.3 Prior to any entry, the Safety Director and Entrant(s) determine if any of the following hazards are or could be present:

4.3.1 Continuous or potential hazardous atmosphere (also consider the type of work to be performed),

4.3.2 Engulfment hazard,

4.3.3 Entrapment hazard,

4.3.4 Other hazardous energy or residual energy.

4.4 Check the appropriate box on the *Confined Space Entry Permit* for all hazards that are or may be present

5.0 PROCEDURES FOR SPACES WITH NO HAZARDS:

5.1 If no hazards are present, check the appropriate box on the *Confined Space Entry Permit.* You CANNOT check the NO HAZARDS box if any work activities that can create hazards, such as hot work, painting, solvent use, or running gasoline or diesel powered engines, will be performed in the space.

5.2 Conduct initial atmospheric testing and record the results on the *Confined Space Entry Permit.*

5.2.1 If initial atmospheric testing indicates unacceptable entry conditions, the entry becomes a PERMIT ENTRY and the controls referenced below must be implemented. Enter the test results on the *Confined Space Entry Permit*.

5.2.2 If initial atmospheric testing indicates acceptable entry conditions, enter the test results on the *Confined Space Entry Permit* and all Entrants, Attendants and the Entry Supervisor sign the permit and proceed with the entry.

5.3 An Attendant is required for all entries into NO HAZARD spaces. The Attendant remains in constant communication with the Entrant(s).

5.4 At the completion of the entry or at the end of the shift, whichever is first, close the permit by entering the date and time at the bottom of the permit. Either an Entrant, Safety Director or the Entry Supervisor must sign the permit closure.

6.0 PROCEDURES FOR PERMIT ENTRY OF A SPACE WITH ANY IDENTIFIED HAZARD:

6.1 Before entry operations begin, the Host Employer must provide the following information, if it has it, to the Controlling Contractor:

6.1.1 The location of each known permit space;

6.1.2 The hazards or potential hazards in each space or the reason it is a permit space; and

6.1.3 Any precautions that the Host Employer or any previous Controlling Contractor or Entry Employer implemented for the protection of employees in the permit space.

6.2 Before entry operations begin, the Controlling Contractor must:

6.2.1 Obtain the Host Employer's information about the permit space hazards and previous entry operations; and

6.2.2 Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:

6.2.2.1 The information received from the Host Employer;

6.2.2.2 Any additional information the Controlling Contractor has about the subjects listed in paragraphs 6.1 – 6.1.3; and

6.2.2.3 The precautions that the Host Employer, Controlling Contractor, or other Entry Employers implemented for the protection of employees in the permit spaces.

6.3 Before entry operations begin, each Entry Employer must:

6.3.1 Obtain all of the Controlling Contractor's information regarding permit space hazards and entry operations; and

6.3.2 Inform the Controlling Contractor of the permit space program that the entry employer will follow, including any hazards likely to be confronted or created in each permit space.

6.4 The Controlling Contractor and Entry Employer(s) must coordinate entry operations when:

6.4.1 More than one entity performs permit space entry at the same time; or

6.4.2 Permit space entry is performed at the same time that any activities that could foreseeably result in a hazard in the permit space are performed.

6.5 If any hazards listed on the *Confined Space Entry Permit* are or may be present at any time during the entry, check the appropriate box(es) on the permit.

6.6 If any activities that would change the characterization of the space, such as hot work, painting, solvent use, or running gasoline or diesel powered engines, check the appropriate box(es) on the permit.

6.7 Select and check the appropriate Controls, Personal Protective Equipment, and Rescue/Retrieval Equipment required for the hazards identified on the *Confined Space Entry Permit*. The Entry Supervisor or Entrant verifies that all of the appropriate controls for ensuring a safe entry are available prior to entry.

6.8 Conduct initial atmospheric testing and record the results documented on the *Confined Space Entry Permit.*

6.8.1 If initial atmospheric testing indicates unacceptable entry conditions, implement space ventilation (described above). Record the test results on the permit.

6.8.2 If initial atmospheric testing indicates acceptable entry conditions, record the test results on the permit and all Entrants, Attendants and the Entry Supervisor sign the permit and proceed with the entry.

6.9 An Attendant is required for all entries into PERMIT ENTRY spaces.

6.10 The Attendant remains in constant communication with the Entrant(s).

6.11 At the completion of the entry or at the end of the shift, whichever is first, close the permit by entering the date and time at the bottom of the permit. Either an Entrant or the Entry Supervisor must sign the permit closure.

7.0 PROCEDURES FOR EVACUATING SPACES

7.1 Entrants must leave the space or be hoisted from the space immediately if, at any time during the entry:

7.1.1 Any of the parameters monitored are found to be outside of the acceptable criteria ranges;

7.1.2 The Entrant(s) or Attendant(s) determine that conditions present pose a risk to the Entrants;

7.1.3 The Attendant orders an evacuation of the space because

7.1.3.1 An Entrant shows signs of physiological effects of hazard exposure;

7.1.3.2 An emergency outside the confined space exists; or,

7.1.3.3 The Attendant cannot effectively and safely perform his or her required duties.

7.2 At no time shall a person enter a confined space to affect a rescue or assist with an evacuation by entering the space unless they are appropriately qualified and have the appropriate equipment, including an atmosphere supplying respirator suitable for rescue in an atmosphere considered immediately dangerous to life and health (IDLH).

7.3 If evacuation of a space is necessary, record the reason and time the evacuation occurred on the *Confined Space Entry Permit.*

7.4 DO NOT re-enter the space until the Entry Supervisor and/or the Entrant(s) verify that appropriate controls have been implemented and that all conditions are safe for re-entry. Re-establish all procedures for entry before re-entering the space, including repeating atmospheric monitoring. Record the re-entry time on the permit.

7.5 After entry operations:

7.5.1 The Controlling Contractor must debrief each entity that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space(s) during entry operations;

7.5.2 The Entry Employer must inform the Controlling Contractor in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations; and

7.5.3 The Controlling Contractor must apprise the Host Employer of the information exchanged with the entry entities;

7.5.4 If there is no Controlling Contractor present at the worksite, the requirements for, and role of, Controlling Contactors must be fulfilled by the Host Employer or other employer who arranges to have employees of another employer perform work that involves permit space entry.

8.0 TRAINING

8.1 The employer must provide training to each employee whose work is affected by this program, at no cost to the employee, and ensure that the employee possesses the understanding, proficiency, knowledge, and skills necessary for the safe performance of the duties assigned under this standard.

8.2 Training will be provided upon assignment to and when there is a change of a position assignment where the employee may serve as Entry Supervisor, Entrant, or Attendant on a job site. Additional training shall be provided when there has been a change in the procedures referenced in this program, whenever there is a change in the permit spaces entry operations that presents a hazard about which an employee has not been previously trained and; whenever there is evidence of a deviation from the permit space entry procedures of this standard or there are inadequacies in the employee's knowledge of use of these procedures.

8.3 All Entry Supervisors, Entrants and Attendants receive the same training.

8.4 Training must address the following:

8.4.1 What constitutes a permit (confined) space;

8.4.2 Understanding of the hazards of permit space and the methods used to isolate, control or in other ways protect employees from these hazards;

8.4.3 Countermeasures for controlling the hazards identified;

8.4.4 Review of the OSHA standards and other guidelines referenced in this Program;

8.4.5 Review of the procedures for confined space entries established in this Program;

8.4.6 Dangers of attempting a rescue if not an authorized entrant;

8.4.7 Procedures for evacuating spaces during entries; and,

8.4.8 Procedures for rescue and retrieval.

8.5 Each employee who receives training should receive a certificate documenting the training. The certificate shall include the date of training and the signature of the training provider.

9.0 RECORDKEEPING

9.1 To comply with OSHA requirements for record retention and recordkeeping, the following records related to this Confined Space Entry Program are maintained:

9.1.1 All *Confined Space Entry Permits* issued in an annual file.

9.1.2 All employee training records in each employee's file.

10.0 PROGRAM REVIEW

10.1 Regular evaluation of the Confined Space Entry Program is important to its effectiveness. It is also important that the procedures and protocols accurately reflect changes in work activities and changes to current regulations and guidelines.

10.2 Review the program annually. The annual review should include the following:

10.2.1 Review all permits to determine compliance with this program.

10.2.2 Review any available documentation regarding space evacuations to identify "lessons learned."

10.2.3 Review all confined space accidents or incidents, and update procedures to minimize the risk of those types of accidents or incidents from occurring.

10.2.4 Evaluate the efficacy of the procedures specified in this program in the context of work activities, and update as necessary.

11.0 PERMIT REQUIRED CONFINED SPACE

11.1 If the scope of the Company's work requires workers to enter a Permit Required Confined Space (PRCS), then the role of the Company is the Entry Employer and they must:

11.1.1 Implement the measures necessary to prevent unauthorized entry;

11.1.2 Identify and evaluate the hazards of permit spaces before employees enter them;

11.1.3 Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:

11.1.3.1 Specifying acceptable entry conditions;

11.1.3.2 Providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces;

11.1.3.3 Isolating the permit space and physical hazard(s) within the space;

11.1.3.4 Purging, inerting, flushing or ventilating the permit space as necessary to eliminate or control atmospheric hazards;

11.1.4 When an employer is unable to reduce the atmosphere below 10 percent LFL, the employer may only enter if the employer inerts the space so as to render the entire atmosphere in the space noncombustible and the employees use PPE to address any other atmospheric hazards (such as oxygen deficiency) and the employer eliminates or isolates all physical hazards in the space.

11.1.5 Determining that, in the event the ventilation system stops working, the monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the permit space;

11.1.6 Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;

11.1.7 Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry and ensuring that employees are not allowed to enter into, or remain in, a permit space with a hazardous atmosphere unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee; and

11.1.8 Eliminating any conditions (for example, high pressure) that could make it unsafe to remove an entrance cover.

11.2 Provide the following equipment (specified in the OSHA standard) at no cost to each employee, maintain that equipment properly, and ensure that each employee uses that equipment properly:

11.2.1 Testing and monitoring equipment needed to comply with space ventilation requirements;

11.2.2 Ventilating equipment needed to obtain acceptable entry conditions;

11.2.3 Communications equipment including any necessary electronic communication equipment for attendants assessing entrants' status in multiple spaces;

11.2.4 Personal protective equipment insofar as feasible engineering and work-practice controls do not adequately protect employees;

> **Note.** The requirements of this part and other PPE requirements continue to apply to the use of PPE in a permit space. For example, if employees use respirators, then the respirator requirements in the OSHA standards for respiratory protection must be met.

11.2.5 Lighting equipment that is approved for the ignitable or combustible properties of the specific gas, vapor, dust, or fiber that will be present, and that is sufficient to enable employees to see well enough to work safely and to exit the space quickly in an emergency;

11.2.6 Barriers and shields;

11.2.7 Equipment, such as ladders, needed for safe ingress and egress by authorized entrants;

11.2.8 Rescue and emergency equipment, except to the extent that the equipment is provided by rescue services; and

11.2.9 Any other equipment necessary for safe entry into, safe exit from, and rescue from, permit spaces.

11.3 Evaluate permit space conditions in accordance with the following paragraphs of this section when entry operations are conducted:

11.3.1 Test conditions in the permit space to determine if acceptable entry conditions exist before changes to the space's natural ventilation are made, and before entry is authorized to begin, except that, if an employer demonstrates that isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer) the employer must:

11.3.1.1 Perform pre-entry testing to the extent feasible before entry is authorized; and,

11.3.1.2 If entry is authorized, continuously monitor entry conditions in the areas where authorized entrants are working, except that employers may use periodic monitoring in accordance with the OSHA standard for monitoring an atmospheric hazard if they can demonstrate that equipment for continuously monitoring that hazard is not commercially available;

11.3.1.3 Provide an early-warning system that continuously monitors for non-isolated engulfment hazards. The system must alert authorized entrants and attendants in sufficient time for the authorized entrants to safely exit the space.

11.3.2 Continuously monitor atmospheric hazards unless the employer can demonstrate that the equipment for continuously monitoring a hazard is not commercially available or that periodic monitoring is of sufficient frequency to ensure that the atmospheric hazard is being controlled at safe levels. If continuous monitoring is not used, periodic monitoring is required with sufficient frequency to ensure that acceptable entry conditions are being maintained during the course of entry operations;

11.3.3 When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors;

11.3.4 Provide each authorized entrant or that employee's authorized representative an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;

11.3.5 Reevaluate the permit space in the presence of any authorized entrant or that employee's authorized representative who requests that the employer conduct such reevaluation because there is some indication that the evaluation of that space may not have been adequate; and

11.3.6 Immediately provide each authorized entrant or that employee's authorized representative with the results of any testing conducted in accordance with this program.

11.4 Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations.

11.4.1 Attendants may be assigned to more than one permit space provided the duties described in the OSHA standard can be effectively performed for each permit space.

11.4.2 Attendants may be stationed at any location outside the permit space as long as the duties described in the OSHA standard can be effectively performed for each permit space to which the attendant is assigned.

11.4.3 If multiple spaces are to be assigned to a single attendant, include in the permit program the means and procedures to enable the attendant to respond to an emergency affecting one or more of those permit spaces without distraction from the attendant's responsibilities under the OSHA standard;

11.4.4 Designate each person who is to have an active role (as, for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations, identify the duties of each such employee, and provide each such employee with the training required by the OSHA standard.

11.4.5 Develop and implement procedures for summoning rescue and emergency services (including procedures for summoning emergency assistance in the event of a failed non-entry rescue) for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue;

Note: Emergency services relied upon for rescue must be able to notify the Company immediately if rescue service becomes unavailable.

11.4.6 Develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required by this standard, including the safe termination of entry operations under both planned and emergency conditions;

11.4.7 Develop and implement procedures to coordinate entry operations, in consultation with the Controlling Contractor, when employees of more than one employer are working simultaneously in a permit space or elsewhere on the worksite where their activities could, either alone or in conjunction with the activities within a permit space, foreseeably result in a hazard within the confined space, so that employees of one employer do not endanger the employees of any other employer;

11.4.8 Develop and implement procedures (such as closing off a permit space and canceling the permit) necessary for concluding the entry after entry operations have been completed;

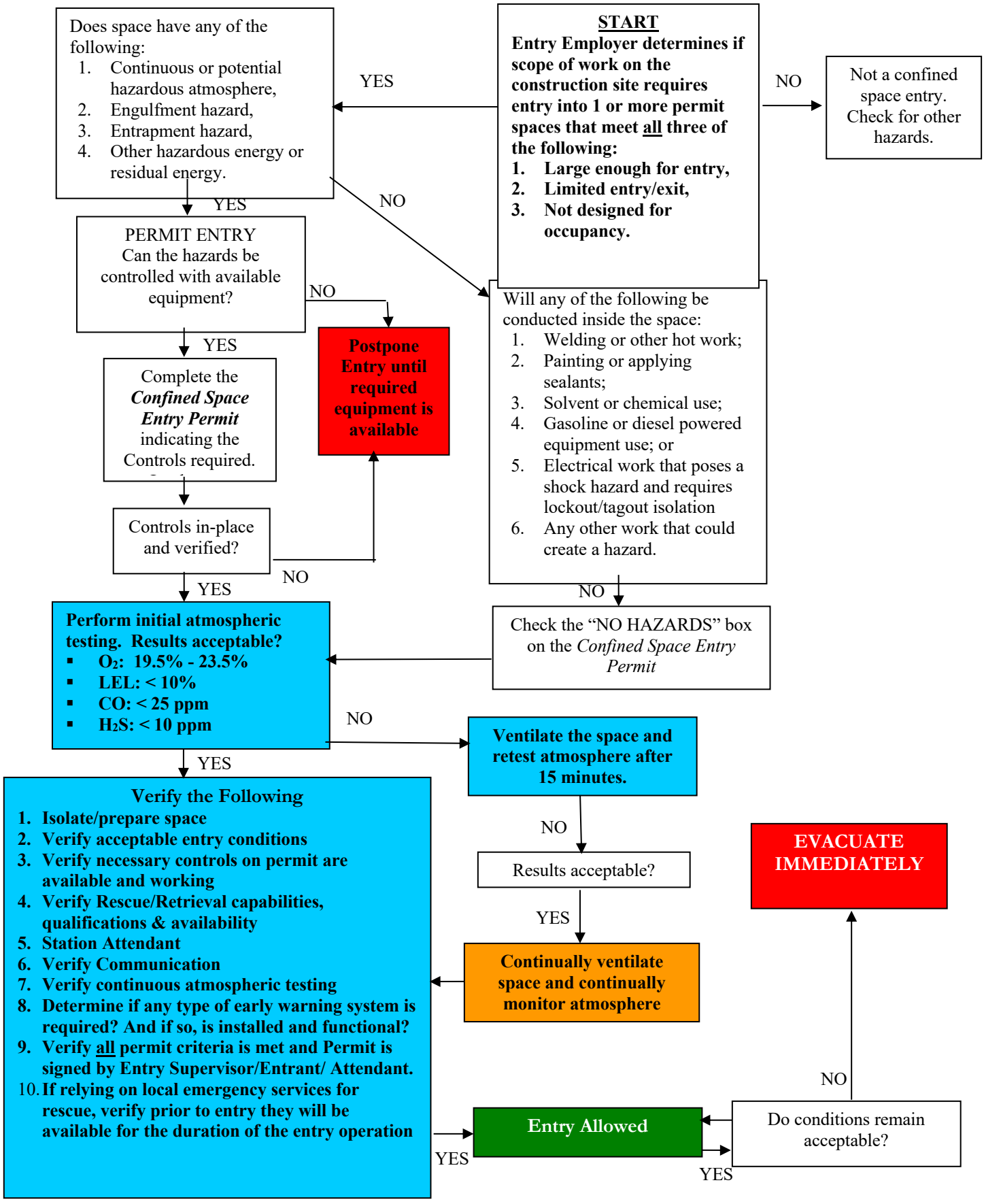
11.4.9 Review entry operations when the measures taken under the permit space program may not protect employees and revise the program to correct deficiencies found to exist before subsequent entries are authorized; and

Note: Examples of circumstances requiring the review of the permit space program include, but are not limited to: any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry, a change in the use or configuration of a permit space and employee complaints about the effectiveness of the program.

11.4.10 Review the permit space program using the canceled permits retained under this program within 1 year after each entry and revise the program as necessary to ensure that employees participating in entry operations are protected from permit space hazards.

Note. Employer may perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.

Appendix A Confined Space Entry in Construction Decision Tree



Appendix B Confined Space Entry Permit

This permit must remain at job site until the entry is completed

Project Address: _____ Project No: ____
Space Description: _____ Date: _____
Purpose of Entry: _____ Time of Entry: _____
Entry Supervisor_____ Time Expires: _____

Hazards and Controls Check here if NO HAZARDS are Present: ☐

Atmospheric Hazards (check if present)		**Controls Required (check if required)**	
Oxygen levels below 19.5%		Initial testing (O_2, LEL, CO, H_2S)	
Oxygen levels above 23.5%		Continuous monitoring (O_2, LEL, CO, H_2S)	
Flammable/combustible gases, vapors or dust (specify):		Other testing* (specify type and duration):	
Toxic gases, vapors or dust (specify):		Ventilation – Blower w/ sufficient duct length	
Pressurized atmosphere		Air purifying respirator (circle)	
Other (specify):		Mask type: Half-face Full-face Cartridge: P100 Combo P100/organic vapor Other (specify):	
Configuration Hazard (specify):		Lines Broken-Capped or Blanked	
Engulfment Hazard (specify):		Purge-Flush and Vent	
Shock hazard/electrocution		Lockout De-energize-Tested and Verified	
Slips, trips, falls (specify):		If Early Warning System is required, is it installed and operational:	
Moving parts (specify):		Lighting (Explosion Proof)	
Connecting pipes, drains, ducts (specify):		Form of Communication (circle): Voice Radio Other:	
Biological hazard (specify):		Visual Contact with Attendant	
Other (specify):		Ground Fault Circuit Interrupter	
Person Protective Equipment (check if required)		**Rescue / Retrieval (check if required)**	
Safety glasses / goggles (circle one)		Full body harness	
Hearing protection		Retrieval tripod with winch	
Hard hat		Lanyard and lifeline	
Steel-toed/steel shank shoes		Coordination with Responsible Person	
Disposable coveralls (Tyvek)		Coordination with local EMS and verify EMS is available the entire duration of the entry operation. If EMS become unavailable, require immediate notification and suspend entry operations until EMS becomes available	
Shoe covers		SCBA available for rescue	
Gloves (circle): Disposable Chemical Protective Leather		Other (specify):	
Face shield		Fire Extinguisher	
Other (specify):			

Atmospheric Testing

Test Interval (circle): Initial Prior to Each Entry Continuous

Tester's Name: _____

	Time of Test							
	Initials of Tester							
Parameter	**Acceptable Entry Criteria**	**Initial Test**	**Test 2**	**Test 3**	**Test 4**	**Test 5**	**Test 6**	**Test 7**
% Oxygen	19.5% to 23.5%							
% LEL*	Less than 5%							
Carbon Monoxide	Less than 25 ppm							
Hydrogen sulfide	Less than 10 ppm							

List other gases or parameters to be tested in blank fields.

Was evacuation of space required at any time? __ YES __ NO

If so, why? _____

Time of evacuation: _____ Time of re-entry: _____

Controls or actions taken to correct reason for evacuation: _____

Testing Instrument Used	**Manufacturer**	**Serial No.**	**Date of Last Calibration**

Permit Authorization
I certify that I have reviewed the permit, understand the hazards that are or may be present, and have verified that the appropriate controls have been implemented. I understand the procedures necessary to ensure safe entry. No entry can be initiated until this permit is completed and signed by all Entrants, Attendants and the Entry Supervisor.

Authorized Entrants

Name: _____ Signature: _____ Date:_____

Name: _____ Signature: _____ Date:_____

Name: _____ Signature: _____ Date:_____

Authorized Attendants

Name: _____ Signature: _____ Date:_____

Name: _____ Signature: _____ Date:_____

Entry Supervisor

Name: _____ Signature: _____ Date:_____

PERMIT CLOSED AT: Date:_____ Time:_____ By:_____

Appendix C

ADDITIONAL DEFINITIONS APPLICABLE TO CONFINED SPACE FOR CONSTRUCTION

Acceptable entry conditions means the conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.

Barrier means a physical obstruction that blocks or limits access.

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

Double block and bleed means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Entry rescue occurs when a rescue service enters a permit space to rescue one or more employees.

Hot work means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).

Inerting means displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolate or isolation means the process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tag-out of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

Line breaking means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

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

Lower flammable limit or lower explosive limit means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Oxygen deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Representative permit space means a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval system means the equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Serious physical damage means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

Tag-out means:(1) Placement of a tag-out device on a circuit or equipment that has been de-energized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tag-out device is removed; and (2) The employer ensures that (i) tag-out provides equivalent protection to lockout, or (ii) that lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

Appendix D

ADDITIONAL INFORMATION RELATING TO THE OSHA CONFIEND SPACE RULES AND "CONSTRUCTION" VS "MAINTENANCE"

5 KEY DIFFERENCES OF THE CONFINED SPACE ENTRY PROGRAM IN CONSTRUCTION RULE

1. More detailed provisions requiring coordinated activities when there are multiple employers at the construction worksite. This will ensure hazards are not introduced into a confined space by workers performing tasks outside the space. An example would be a generator running near the entrance of a confined space causing a buildup of carbon monoxide within the space.

2. Requiring a competent person to evaluate the work site and identify confined spaces, including permit spaces.

3. Requiring continuous atmospheric monitoring whenever possible.

4. Requiring continuous monitoring of engulfment hazards. For example, when workers are performing work in a storm sewer, a storm upstream from the workers could cause flash flooding. An electronic sensor or observer posted upstream from the work site could alert workers in the space at the first sight of the hazard, giving the workers time to evacuate the space safely.

5. Allowing for the suspension of the permit, instead of cancellation, in the event of changes from the entry conditions listed on the permit before re-entry.

In addition, OSHA has added provisions to the new rule that clarifies existing requirements in the General Industry standard. These include:

1. Requiring that employers who direct workers to enter a space without using a complete permit system prevent worker's exposures to physical hazards through elimination of the hazard or isolation methods such as lockout/tagout.

2. Requiring that employers who are relying on local emergency services for emergency services arrange for the responders to give the employee advance notice if they will be unable to respond for a period of time (because they are responding to another emergency, attending department wide training, etc.).

3. Requiring employers to provide training in a language and vocabulary that the workers understands.

Finally, several terms have been added to the definitions for the construction rule, such as "Entry Employer" to describe the employer who directs the workers to enter a space and "entry rescue" added to clarify the differences in the types of rescue employers can use.

"CONSTRUCTION" VS "MAINTENANCE"

"Maintenance activities" have commonly been defined in dictionaries as making or keeping a structure, fixture or foundation (substrates) in proper condition in a routine, scheduled or anticipated fashion. In OSHA's directive on the general industry confined space standard, the Agency stated that maintenance involves "keeping equipment working in its existing state, i.e., preventing its failure or decline".

Construction work is not limited to new construction, but can included the repair of existing facilities or the replacement of structures and their components. For example, the replacement of one utility pole with a new, identical pole would be maintenance however, if it were replaced with an improved pole or equipment, it would be considered construction.

In addition, the scale and complexity of the project are also relevant. This takes into consideration concepts such as the amount of time and material required to complete the job. For example, if a steel beam in a building had deteriorated and was to be replaced with a new, but identical beam, the project would be considered a construction repair rather than maintenance because of the replacement project's scale and complexity. If a bridge were to be stripped and repainted, that would be considered construction even if the repainting were done on a scheduled basis. Replacement of a section of limestone cladding on a building, though not necessarily a large project in terms of scale, would typically be considered construction because it is a complex task in the view of the steps involved and tools needed to do the work. The physical size of an object that is being worked on can be a factor if, because of its size, the process of removal and replacement involves significantly altering the structure or the equipment that the component is within. Therefore, if the process of removal and replacement is a large-scale project, it's likely to be considered construction. It is not the classification of what you are working on as "equipment" or "structure" that is significant, but rather the project's scale and complexity.

Whether the work is performed in-house or by an outside contractor is not a factor; it's not the personnel that determines whether the work is considered maintenance or construction, but the work itself.

Note that, though the work may itself occur during a scheduled "maintenance outage," this alone is not enough to qualify it as maintenance. For example, it is possible that work may be construction, but performed during a maintenance outage to minimize loss of productivity.

Just because a company doesn't define itself as a construction company, doesn't mean that the task being performed cannot be classified as construction under OSHA's definition of the term "construction."

Construction work verses maintenance work is a subjective area. The information above should provide guidance as it comes directly from OSHA interpretations and can be used to determine whether Confined Space for General Industry (maintenance) or Confined Spaces for Construction (construction) applies to your operations.

Bottom Line - if after this interpretation of “construction” verses “maintenance” there is still uncertainty as the definition of your operations, defer to the Confined Spaces in Construction (§1926.1201) since it is considered the more protective of the two regulations.

KEY DEFINITIONS (additional related definitions can be found in Appendix C)

For the purposes of this program, the following OSHA definitions related to confined space and permit-required confined space in construction shall apply:

Attendant is an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the duties specified in §1926.1209.

Authorized entrant is an employee who is authorized by the entry supervisor to enter a permit space.

Competent person is 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 the authorization to take prompt corrective measures to eliminate them.

Confined Space is defined as a space meeting **all** of the following conditions:

1. Is large enough and so configured that an employee can bodily enter it (any part of the body breaks the plane of the opening);
2. Has limited or restricted means for entry and exit; and
3. Is not designed for continuous occupancy.

Examples of the types of confined spaces that may be found on construction sites include, but are not necessarily limited to:

- bins
- pits (such as elevator, escalator, pump, valve or other equipment)
- tanks (such as fuel, chemical, water or other liquid, solid or gas)
- scrubbers
- sewers
- heating, ventilation & air conditioning (HVAC) ducts
- precast concrete and other pre-formed manhole units
- digesters
- lift stations
- air receivers
- sludge gates
- step up transformers
- bag houses
- mixers/reactors
- open top spaces more than 4 feet in depths such as: pits, tubs, vaults and
- attics & crawl spaces
- manholes (such as sewer, storm drain, electrical , communication or other utility)
- incinerators
- concrete pier columns
- transformer vaults
- storm drains
- water mains
- drilled shafts
- enclosed beams
- vessels
- cesspools
- silos
- air preheaters
- turbines
- chillers
- boilers

vessels

Control is the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlling Contractor is the employer that has overall responsibility for construction at the worksite.

Early-warning system is any method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include, but are not limited to: alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

Emergency is any occurrence (including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

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

Entry is the action by which any part of a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space, whether or not such action is intentional or any work activities are actually performed in the space.

Entry Employer means any employer who decides that an employee it directs will enter a permit space.

> **Note.** An employer cannot avoid the duties of the standard merely by refusing to decide whether its employees will enter a permit space and OSHA will consider the failure to so decide to be an implicit decision to allow employees to enter those spaces if they are working in the proximity of the space.

Entry permit (permit) is the written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in this program.
Entry supervisor is the qualified person (such as the site supervisor, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard.

Note. An entry supervisor may also serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he/she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazard is any physical hazard or hazardous atmosphere as defined herein.
Hazardous atmosphere is any atmosphere that has the potential to expose employees to the risk of death, incapacitation, asphyxiation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following conditions:

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

Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart D—Occupational Health and Environmental Control, or in Subpart Z—Toxic and Hazardous Substances, of applicable OSHA regulations and which could result in employee exposure in excess of its dose or permissible exposure limit;

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

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

Note. For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, §1926.59 of applicable OSHA regulations, published information and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Host employer is the employer that owns or manages the property where the construction work is taking place.

Note. In no case will there be more than one Host Employer. If the owner of the property on which the construction activity occurs has contracted with an entity for the general management of that property and has transferred to that entity the required information, OSHA will treat the contracted management entity as the Host Employer for as long as that entity manages the property. Otherwise, OSHA will treat the owner of the property as the Host Employer.

Immediately dangerous to life or health (IDLH) is any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

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

Limited or restricted means for entry or exit is a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Monitor or monitoring is the process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-entry rescue occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-permit confined space is a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this subpart.

Permit-required Confined Space (Permit Entry) is a confined space (as defined above), that has **one or more** of the following characteristics:

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

Important Notes:

Work performed within the space, including hot work (welding, cutting, soldering, brazing, etc.), painting, applying sealants, solvent use or running gasoline or diesel powered engines can result in hazardous atmospheres in the space.

Workers should be reminded that welding fumes and chemical vapors (glue, seam sealer, etc.) can travel to other parts of a confined space. Consider these activities in the assessment of the confined space hazards

Physical hazard is an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: explosives, mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

Prohibited condition is any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

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.

Rescue is the act of retrieving and providing medical assistance to one or more employees who are in a permit space.

Ventilate or ventilation is the means of controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of §1926.57—Ventilation.

Confined Space Entry Permit

Date and Time Issued: _____ Date and Time Expires: _____ Job site/Space I.D.: _____
Job Supervisor: _____ Equipment to be worked on: _____ Work to be performed: _____
Stand-by personnel: _____ _____ _____

Type of Confined Space: Permit_____ Non-Permit_____

1. Atmospheric Checks: Time_____ Oxygen_____% Explosive _____%L.F.L. Toxic _____PPM

2. Tester's signature: _____

3. Source isolation (No Entry):	N/A	Yes	No
Pumps or lines blinded,	( )	( )	( )
disconnected, or blocked	( )	( )	( )

4. Ventilation Modification:	N/A	Yes	No
Mechanical	( )	( )	( )
Natural Ventilation only	( )	( )	( )

5. Atmospheric check after isolation and Ventilation:

Oxygen _____%	>	19.5	%
Explosive _____% L.F.L	<	10	%
Toxic _____PPM	<	10	PPM H (2) S

Time _____
Tester's signature: _____

6. Communication procedures: _____
_____

7. Rescue procedures: _____
_____

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

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

10. Periodic atmospheric tests:
Oxygen____% Time____ Oxygen____% Time____ Explosive____% ____Time Explosive____% ____Time Toxic____% ____Time
Oxygen____% Time____ Oxygen____% Time____ Explosive____% ____Time Explosive____% ____Time Toxic____% ____Time

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

Permit Prepared By:(Supervisor)_____ Approved By:(Unit Supervisor)_____
Reviewed By (Cs Operations Personnel): _____ _____
(Print name) (Signature)

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 111 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Contractor Briefing

Purpose
To provide a contractor or individual, with safety information, prior to permitting work or services being performed.

Scope
To all contractors or individuals who perform any work or service at Newkirk Novak.

Responsibilities
It is the Superintendent's responsibility to insure this program is fully implemented each time work is begun on the jobsite.

Special Definitions

Procedure

1.0 Prior to permitting a contractor, or individual, to perform any type of maintenance or services the following instructions shall be completed in full:

- **1.1** The contractor or individual shall be furnished with a copy of the "Emergency Action Plan" which includes an explanation in detail of the program.
- **1.2** The contractor or individual shall be furnished with a copy of the "Hazard Communication Program" to read. He/she will be advised of the hazards involved at this location. Copies of the SDS's pertinent to the operation will be made available for his/her review.
- **1.3** The contractor or individual shall be furnished with copies of the Lockout/Tagout Program to read. The contractor, or individual, is responsible for briefing his/her own personnel on procedures.
- **1.4** Fire safety shall be stressed during this briefing. Particular attention will be given to prevention. Location of firefighting equipment will be discussed.
- **1.5** The contractor or individual shall be furnished with a copy of the "Jobsite Safety Rules"

2.0 The contractor, or individual, shall sign the Contractor Briefing Form indicating that he/she was furnished the information noted above, and that he/she will comply with all the rules.

3.0 The signed document, completed by the contractor or individual, shall be filed at the office and maintained for at least one year or until the work is completed, whichever is longer.

4.0 The contractor must provide a copy of their Certificate of Liability Insurance and Workers' Compensation Insurance to Newkirk Novak's Management prior to beginning work on Newkirk Novak's property.

CONTRACTOR BRIEFING FORM

This is to certify that the following programs for Newkirk Novak have been explained to me:

Hazardous Communications Program.

Lockout/Tagout Program

Emergency Action Plan

Jobsite Safety Rules

I was informed that copies of these programs and the related SDS's are on file for my review and are located electronically in Sharefile.

I acknowledge that it is my responsibility to brief my employees of the dangers associated with the operation of said company and to obey all safety rules established by Newkirk Novak.

Contractor Name:_____

Contractor Representative
Signature:_____Date:_____

Company Representative's
Signature:_____Date:_____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 116-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Crane and Derricks - Construction

Purpose
To provide guidelines and instructions for the safe operations of Cranes and Derricks

Scope
All employees required to operate Cranes and Derricks

Responsibilities
See Procedure section

Special Definitions

NOTE:
See OSHA qualifications for Rigger as of November 8, 2010 (29 CFR 1926.1401, 1926.1404, and 1926.1425)

See OSHA qualifications for Signal Person as of November 8, 2010 (29 CFR 1926.1419 and 1926.1428)
See other requirements for Signal Persons as of November 8, 2010 (29 CFR 1926.1404, 1926.1430, 1926.1431, and 1926.1441)

Procedure
1.0 GENERAL

- **1.1** Unless otherwise specified, the requirements of this section are applicable to all cranes and derricks
- **1.2** Every crane shall have the following documents with them (in the cab) at all times they are to be operated:
  - **1.2.1** A copy of the operating manual developed by the manufacturer for the specific make and model of the crane;
  - **1.2.2** A copy of the load-rating chart for the crane/derrick in use (separate or included in the operating manual), which shall include:
    - **1.2.2.1** The crane make and model, serial number, and year of manufacturer;
      - **1.2.2.1.1** EM 385-1-1
      - **1.2.2.1.2** 3 Nov 03
      - **1.2.2.1.3** 304
    - **1.2.2.2** Load ratings for all crane operating configurations, including optional equipment;

1.2.2.3 Recommended reeving for the hoist line; and

1.2.2.4 Operating limits in windy or cold weather conditions.

1.2.3 A durable load chart with legible letters and figures shall be fixed at a location visible to the operator while seated at the control station.

1.2.4 The crane's log book, which shall be used to record operating hours and all crane inspections, tests, maintenance, and repair. The log shall be updated daily as the crane is used and shall be signed by the operator and supervisor. Service mechanics shall sign the log after conducting maintenance or repairs on the crane.

1.3 Responsibilities in crane operations

1.3.1 The operator shall not engage in any activity that will divert his/her attention while operating the crane.

1.3.2 The operator shall not leave the controls while a load is suspended.

1.3.3 Before leaving the crane unattended, the operator shall:

1.3.3.1 Land any load, bucket, lifting magnet, or other device;

1.3.3.2 Disengage the master clutch;

1.3.3.3 Set travel, swing, boom brakes, and other locking devices;

1.3.3.4 Put the controls in the off or neutral position;

1.3.3.5 Secure the crane against accidental travel; and

1.3.3.6 Stop the engine

1.3.3.6.1 Exception: When crane operation is frequently interrupted during a shift and the operator must leave the crane. Under these circumstances, the engine may remain running and the following conditions shall apply:

1.3.3.6.1.1 The operator shall be situated where unauthorized entry of the crane can be observed; and

1.3.3.6.1.2 the crane shall be located within an area protected from unauthorized entry.

1.3.4 The operator shall respond to signals from the person who is directing the lift or an appointed signal person. When a signal person is not used in the crane operation, the operator shall ensure he/she has full view of the load and the load travel paths at all times the load is rigged to the crane.

1.3.5 Each operator is responsible for those operations under his/her direct control. Whenever there is any doubt as to safety, the operator shall consult his/her supervisor before commencing the operation.

1.3.6 Except for critical lifts, when these duties will be carried out by the lift supervisor, the rigger shall ensure that:

1.3.6.1 The crane is level and, where necessary, blocked;

1.3.6.2 The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches;

1.3.6.3 The lift and swing path is clear of obstructions and adequate clearance is maintained from electrical sources; and

1.3.6.4 All persons are clear of the swing radius of the counterweight.

1.3.7 When two or more cranes are used to lift one load, one designated person shall be responsible for the operation.

1.3.7.1 The designated person shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

1.3.7.2 The designated person shall make such determinations as the necessity to reduce crane ratings, load position, boom location, ground support, and speed of movement, which are required to safely make the lift.

1.3.7.3 The designated person shall ensure that all prescribed communication (including signaling) personnel and/or equipment are on hand and properly functioning, and that all personnel involved with the crane operation understand the communication systems and their responsibilities associated with communications.

1.4 Operator designation

1.4.1 Only qualified, designated persons may operate cranes or derricks. Only those operators qualified to operate a particular type of crane or derrick may operate that type of machinery; proof of qualification shall be in writing. In addition to fully qualified crane operators, the following personnel may be designated to operate cranes under limited conditions:

1.4.1.1 Trainees under the direct supervision of the designated operator of the crane;

1.4.1.2 Maintenance personnel who have completed all operator trainee qualification requirements. Operation is limited only to those functions necessary to perform maintenance or verify performance of a crane; and

1.4.1.3 Inspectors who have completed all operator trainee qualification requirements. Operation is limited only to functions necessary to accomplish inspection.

1.4.1.3.1 Each USACE Command with USACE employees designated as crane or derrick operators shall designate a qualified individual(s) (in-house or contract) to administer examinations and to qualify USACE (but not Contractor) operators.

1.4.1.3.2 Contractor crane and derrick operators shall be designated as qualified by a professional crane/derrick training or certification source that qualifies crane and derrick operators (e.g., an independent testing and qualifying company, a union, a governmental agency, or a qualified consultant (can be an in house resource)).

1.5 Operator qualifications and training

1.5.1 Proficiency qualifications

1.5.1.1 All operators, Government or Contractor, shall be instructed in and qualified for each type of crane or derrick he/she is to operate.

1.6 Crane and Derrick Design and Construction Standards

1.6.1 Cranes and derricks shall be designed and constructed in accordance with the applicable ANSI/ASME standards in effect at the time of initial construction, and the additional requirements of this manual, whichever is more stringent.

1.6.2 Modification of existing cranes and derricks shall be performed in accordance with the current ANSI/ASME standards. It is not the intent of this manual to require immediate retrofitting of existing equipment.

2.0 CRANE DESIGN AND CONSTRUCTION STANDARDS

2.1 Mobile cranes ANSI/ASME B30.5

2.2 Clearances

2.2.1 Adequate clearance shall be maintained from electrical sources

2.2.2 Overhead and gantry cranes clearances shall be in accordance with the Crane Manufacturer's Association of America (CMAA) 70.

2.2.3 All other cranes

2.2.3.1 Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm. The minimum adequate clearance is 16 in (40.6 cm).

2.2.3.2 Accessible areas within the swing radius of the rear of the crane's rotating superstructure, either permanently or temporarily mounted, shall be barricaded to prevent an employee from being struck or crushed by the crane.

2.3 Hoisting ropes shall be installed in accordance with ANSI/ASME standards and the equipment manufacturer's recommendations.

2.3.1 Overhead and gantry cranes shall have at least two full wraps of cable on the drums of hoisting equipment at all times.

2.3.2 All other cranes shall have at least three full wraps (not layers) of cable on the drums of hoisting equipment at all times.

2.3.3 The drum end of the rope shall be anchored to the drum by an arrangement specified by the crane or rope manufacturer.

2.4 Communications

2.4.1 A standard signal system shall be used on all cranes and derricks

2.4.2 In situations where the operator cannot see the load, audio (radio) communications shall be used (note that this does not preclude the use of hand signals in addition to audio). In all other operations, audio communications should be used.

2.5 Inspections

2.5.1 Inspections of cranes and derricks shall be in accordance with applicable ANSI/ASME standards, OSHA regulations, and the manufacturer's recommendations.

2.5.2 A qualified person shall conduct inspections

2.5.3 The Contractor shall notify the GDA at least 24 hours prior to any inspections/tests so that the GDA may be available to observe the inspection/test. There are basically five types of inspections:

2.5.3.1 Initial inspection. Before initial use, a qualified person shall inspect all new and altered cranes to ensure compliance with all applicable standards.

2.5.3.2 Functional test inspection. Before every operation (at the beginning of each shift) of the crane, the operator or designated person shall conduct start-up (pre-operational) inspections as follows:

2.5.3.2.1 Overhead and gantry cranes. A visual and audible examination of the crane shall be conducted. Items to be functionally tested are the controls and the upper limit. Documentation of the test shall be noted in the operator's log.

2.5.3.2.2 All other cranes and derricks. If checklists are used for start-up (pre-operational) inspections, a copy of the checklist shall be maintained at the project site. If checklists are not used, the operator or designated person shall indicate the successful completion of the inspection (in

accordance with the manufacturer's recommendations) in the operator's log

2.5.3.3 Frequent inspection. A frequent inspection is a visual and audible examination of the crane. The crane operator or designated person shall conduct a frequent inspection as follows:

2.5.3.3.1 Normal service – Monthly

2.5.3.3.2 Heavy service – Weekly to monthly

2.5.3.3.3 Severe service – Daily to weekly

2.5.3.4 Periodic inspection: A periodic inspection is a visual and audible examination of the crane. The crane operator or designated person shall conduct a periodic inspection as follows:

2.5.3.4.1 Normal service – Yearly

2.5.3.4.2 Heavy service – Yearly

2.5.3.4.3 Severe service – Quarterly

2.5.3.5 Inspection of cranes not in regular use

2.5.3.5.1 Infrequent service cranes that have been idle for a period of 1 month or more, but less than 1 year, shall be inspected

2.5.3.5.2 Infrequent service cranes that have been idle for a period of 1 year or more shall be inspected. Infrequent service cranes that are exposed to adverse environmental conditions shall be inspected more frequently, as determined by the GDA or the Contractor with the concurrence of GDA.

2.6 Operational Limits

2.6.1 The manufacturer's specifications and limitations applicable to the operation of any crane or derrick shall be followed. At no time shall a crane or derrick be loaded in excess of the manufacturer's rating, except overhead and gantry cranes in accordance with ANSI/ASME B30.2 when overrated loads shall not exceed 125% of rated load for test purposes or planned engineered lifts for overhead and gantry cranes.

2.6.2 Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a registered engineer competent in this field, and such determinations will be documented and recorded.

2.6.3 Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.

2.7 Riding on loads, hooks, hammers, buckets, material hoists, or other hoisting equipment not meant for personnel handling is prohibited.

2.8 When practical and when their use does not create a hazard, tag lines shall be used to control loads.

2.9 Whenever a slack line condition occurs, the proper seating of the rope in the sheaves and on the drum shall be checked prior to further operations.

2.10 Critical lift plans. Before making a critical lift, a qualified person shall prepare a critical lift plan. (The qualified person preparing the plan may be the crane operator, lift supervisor, or the rigger). The crane operator, lift supervisor, and rigger shall participate in the preparation. The plan shall be documented and a copy shall be

provided to the GDA. The plan shall be reviewed and signed by all personnel involved with the lift.

2.10.1 The plan shall specify the exact size and weight of the load to be lifted and all crane and rigging components that add to the weight. The manufacturer's maximum load limits for the entire range of the lift, as listed in the load charts, shall also be specified.

2.10.2 The plan shall specify the lift geometry and procedures, including the crane position, height of the lift, the load radius, and the boom length and angle, for the entire range of the lift.

2.10.3 The plan shall designate the crane operator, lift supervisor and rigger and state their qualifications.

2.10.4 The plan will include a rigging plan that shows the lift points and describes rigging procedures and hardware requirements.

2.10.5 The plan will describe the ground conditions, outrigger or crawler track requirements, and, if necessary, the design of mats, necessary to achieve a level, stable foundation of sufficient bearing capacity for the lift. For floating cranes or derricks, the plan shall describe the operating base (platform) condition and any potential list.

2.10.6 The plan will list environmental conditions under which lift operations are to be stopped.

2.10.7 The plan will specify coordination and communication requirements for the lift operation.

2.10.8 For tandem or tailing crane lifts, the plan will specify the make and model of the cranes, the line, boom, and swing speeds, and requirements for an equalizer beam.

2.11 Environmental considerations

2.11.1 Cranes/derricks shall not be operated when wind speeds at the site attain the maximum wind velocity recommendations of the manufacturer. Projects shall have adequate means for monitoring local weather conditions, including a wind-indicating device.

2.11.2 Operations undertaken during weather conditions that produce icing of the crane structure or reduced visibility should be performed at reduced functional speeds and with signaling means appropriate to the situation.

2.11.3 When conditions are such that lightning could occur, all crane operations shall cease.

2.11.4 For night operations, lighting adequate to illuminate the working areas while not interfering with the operator’s vision shall be provided.

2.12 Maintenance and repairs

2.12.1 Maintenance and repairs shall be conducted in accordance with the manufacturer's procedures and precautions in accordance with the applicable ANSI/ASME standard.

2.12.2 Replacement parts or repairs shall have at least the original design facto r; replacement parts for load bearing and other critical parts shall be obtained from the original equipment manufacturer (OEM) or be recertified in accordance with

2.13 All cranes and derricks shall be equipped with an anti-two blocking (A2B) device that will disengage the function that is causing the two -blocking or an A2B damage prevention feature. They shall be tested and certified functional by a competent person

prior to operating the crane/derrick. *Floating cranes may use an A2B alarm system in lieu of a disengaging device unless they are hoisting personnel. Cranes and derricks used in duty cycle operations are exempt from the requirements for A2B devices.*

2.14 All cranes shall be equipped with a fire extinguisher with a basic minimum rating of 10-B:C.

3.0 CRAWLER, TRUCK, WHEEL, AND RINGER-MOUNTED CRANES

3.1 All lattice boom and hydraulic mobile cranes (except articulating boom cranes) shall be equipped with a boom angle indicator and a load indicating device, or a load moment indicating (LMI) device (rated capacity indicator). Calibration and testing of indicators will be performed in accordance with the manufacturer's recommendations. *When cranes are used in duty cycle operations they are exempt from the requirements for load indicating devices and LMI devices.*

3.2 All lattice boom and hydraulic mobile cranes shall be equipped with a means for the crane operator to visually determine the levelness of the crane.

3.3 On all lattice boom and hydraulic mobile cranes (except articulating boom cranes), drum rotation indicators shall be provided and located to afford sensing by the operator. *Equipment manufactured before 1990 is exempt from this requirement, but retrofit is highly recommended.*

3.4 All lattice boom and hydraulic mobile cranes (except articulating boom cranes) shall be equipped with a boom angle or radius indicator located within the operator's view.

3.5 When required on a crane/derrick, A2B devices shall be installed at all points of two - blocking.

3.5.1 Lattice boom cranes shall be equipped with an A2B device to stop the load hoisting and boom-down functions before the load block or load contacts the boom tip.

3.5.2 Lattice boom cranes that are used exclusively for duty cycle operations are exempt from A2B equipment requirements. When a lattice boom crane engaged in duty cycle work is required to make a non-duty cycle lift (for example, to lift a piece of equipment), it will be exempt from the A2B equipment requirements if the following procedures are implemented:

3.5.2.1 An international orange colored warning device (warning flag, warning tape, or warning ball) is properly secured to the hoist line at a distance of 8 ft to 10 ft (2.4 m to 3 m) above the rigging;

3.5.2.2 The signal person acts as a spotter to alert the crane operator with a "STOP" signal when the warning device approaches the boom tip and the crane operator ceases hoisting functions when alerted of this;

3.5.2.3 While the non-duty cycle lift is underway, the signal person shall not stand under the load, shall have no duties other than as a signal person, and shall comply with the signaling requirements of this manual.

3.5.3 For lattice boom cranes with manually activated friction brakes, A2B warning devices may be used in lieu of A2B prevention devices.

3.5.4 Telescopic boom cranes shall be equipped with an A2B device to stop the load hoisting function before the load block or load contacts the boom tip and to prevent damage to the hoist rope or other machine components when extending the boom.

3.5.5 Telescopic boom cranes that are used exclusively for duty cycle operations shall be equipped with a two -blocking damage prevention feature or warning device to prevent damage to the hoist rope or other machine components when extending the boom.

3.6 All mobile cranes with cable-supported booms shall be equipped with:

3.6.1 Boom stops that, at the angle specified by the crane manufacturer, limit the movement of that portion of the boom below the point at which the boom stop acts on the boom.

3.6.1.1 The boom stop manufacturer shall certify that the boom stop has been designed, manufactured, and functionally tested such that it will fulfill the requirement of SAE Standard J220.

3.6.1.2 A crane boom stop field test will be conducted to verify the proper setup of the boom stops and functioning of the boom hoist disengaging device. This test will be conducted before initiating the performance test. Deficiencies noted shall be corrected before the performance test.

3.6.2 All jibs shall have positive stops to prevent their movement of more than 5 degrees above the straight line of the jib and boom on conventional crane booms.

3.6.3 A properly functioning boom hoist-disengaging device that shall automatically and completely disengage the boom hoisting power from the boom hoist drum when the boom has reached its highest rated angle. When power is thus disengaged, the boom hoist drum shall automatically be restrained from motion in the lowering direction under any rated condition.

3.7 The crane's foundation shall be evaluated for stability. The evaluation shall consider ground conditions, static and dynamic loads, and operating quadrants. Cribbing shall be provided in accordance with the manufacturer's recommendations.

3.8 Boom assembly and disassembly

3.8.1 The manufacturer's boom assembly and disassembly procedures shall be followed. The manufacturer's boom assembly and disassembly procedures shall be reviewed by all members of the assembly/disassembly team before the start of assembly and disassembly.

3.8.2 When removing pins or bolts from a boom, workers shall stay out from under the boom. Sections shall be blocked or otherwise secured to prevent them from falling, when necessary.

3.9 Outriggers

3.9.1 When the load to be handled and/or the operating radius require the use of outriggers, or anytime when outriggers are used, outriggers shall be fully extended to the appropriate setting indicated by the load chart. The outriggers will be deployed so that the weight o f the machine is totally removed from the wheels at every setting (except locomotive cranes).

3.9.2 When outrigger floats are used, they shall be securely attached to the outriggers.

3.9.3 Blocking under outriggers floats shall meet the following requirements:

3.9.3.1 Sufficient strength to prevent crushing, bending, or shear failure;

3.9.3.2 Such thickness, width, and length as to completely support the float, transmit the load to the supporting surface, and prevent shifting, toppling, or excessive settlement under load; and

3.9.3.3 Use of blocking only under the outer bearing surface of the extended outrigger beam floats.

3.10 Unless the manufacturer has specified an on-rubber rating, mobile cranes shall not pick or swing loads over the side of the crane unless the outriggers (if so equipped) are down and fully extended.

3.11 Unless recommended against by the manufacturer, crane booms shall be lowered to ground level or secured against displacement by wind loads or other outside forces when not in use. If the manufacturer recommends against this practice, the manufacturer's recommended practice shall be followed.

CRANE & HOIST ASSEMBLY INSPECTION

Monthly

	YES	NO
CRANE MAST		
Mast securely mounted to floor (not loose), straight and level?	___	___
CRANE "I" BEAM		
I beam straight and level and in good mechanical condition?	___	___
HOIST		
Hoist rollers operate smoothly and freely?	___	___
Hoist rollers straight and securely mounted to hoist?	___	___
Hoist chain and/or links in good condition - not stretched or warped?	___	___
Hoist hook not cracked, bent (over 15 % of OEM) and latch in good shape?	___	___
ELECTRICAL		
Electrical cord(s) in good shape (not frayed, cut or exposed wires)?	___	___
Electrical connections in good shape (male/female plugs intact)?	___	___
Control box/cords in good condition?	___	___
Controls up/down function clearly marked and in good condition?	___	___
Limit switch in good operational condition?	___	___

Inspected by: _____ Date: _____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 135 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Disciplinary Process

Purpose
To establish a process of disciplinary action for those employees involved in any unsafe acts or that are not in compliance with company safety rules and regulations

Scope
All employees

Responsibilities
All employees are responsible to maintain a safe worksite by following all company safety standards as well as O.S.H.A. standards.

Special Definitions

Procedure

1.0 The company's safety policies are put into place to maintain a safe work environment and encourage safety behaviors. The safety policies and procedures are intended to protect the health and safety of all employees and are of mutual benefit to all employees. The Company believes in a safety disciplinary system that is intended for constructive development of employees. Standards of safe work conduct and actions for unsafe work conduct should be clearly communicated to all employees.

2.0 Employees involved in any unsafe acts or that are not in compliance with company safety policies shall be subject to disciplinary action including discharge. The disciplinary action taken will depend upon the seriousness of the offense.

3.0 Type of Progressive Discipline
The corrective action process is progressively severe, and includes the following options:

- **3.1** Verbal Warning - Notifies the employee that unsafe work conducts or behavior must be improved after informal counseling has failed to produce results. This verbal warning is to be documented and placed in the employees permanent personnel file.
- **3.2** Written Warning - A formal notice to an employee that further disciplinary action will be taken unless unsafe work conducts or poor safety behaviors continues. This written warning is to be documented, signed by the employee and placed in the employees permanent personnel file.
- **3.3** Suspension - Time off without pay to be used in cases or repeated abuses of Company safety policies or safety behaviors. Suspension may also be used during

periods of investigation. The suspension shall be signed by the employee and documentation placed in the employee's permanent personnel file with the details of the suspension.

3.4 Termination/Discharge - Termination of employment is used when the employee has been given the opportunity to meet safety policies and/or safety behavior standards and, in safety management's evaluation, has failed to do so. Discharge may be used for a first offense when the violation is so severe that no other response is appropriate.

4.0 All personnel must realize that the steps in a progressive discipline system serve as general guidelines. There are varying degrees of seriousness, which pertain to safety behaviors, and/or infractions of safety policies. There are certain instances where unsafe work conducts and/or poor safety behaviors are of such a serious nature that immediate suspension or termination, without prior warning or consultation, may be the justified course of action.

Employee Warning Notice

Employee Name _____Date of Warning __/___/___

Employee/Payroll #_____Department_____Shift_____

Type of Violation:

____ Attendance	____ Carelessness	____ Insubordination
____ Lateness or Early Quit	____ Failure to Follow Instructions	____ Violation of Safety
____ Rudeness to Employees	____ Willful Damage to Material	____ Violation of Procedure
____ Unsatisfactory Work Quality	____ Violation of Company Policy	____ Flagrant Misconduct

Previous Warnings:

	VERBAL	WRITTEN	DATE	BY WHOM
1ST WARNING				
2ND WARNING				
3RD WARNING				

Employer Statement:

Date of Incident ____/____/____ Time _____

_____

_____

Employee Statement:

_____ I agree with Employer's Statement
_____ I disagree with Employer's description for the following reasons:

_____

_____

Action to be taken: ____ Warning ____Probation ____Suspension ____Dismissal

I have read this Warning Notice and understand it:

Signature of Employee _____ Date: _____

Signature of Supervisor_____ Date: _____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 112 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Electrical Safety

Purpose
This program contains requirements for safe work practices and procedures to protect qualified and unqualified employees from those hazards associated with electricity as provided for by CFR 1910.331 through 1910.335.

Scope
This program applies to all work operations where employees may be exposed to live parts and/or those parts that have been deenergized.

Responsibilities
The Safety Director/Operations Manager will be responsible for overseeing administration of this facility's Electrical Safety Program. Duties will include review (at least on an annual basis) and updating this program as needed to ensure compliance.

Special Definitions
Qualified Personnel: Those who have training in avoiding the electrical hazards of working on or near exposed energized parts

Unqualified Personnel: Those with little or no training in avoiding the electrical hazards of working on or near exposed energized parts

Procedure
1.0 GENERAL

- **1.1** All safety practices and procedures will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contact. ONLY Qualified personnel may work on the following:
  - **1.1.1** Covered Work
  - **1.1.2** Premises wiring: Installations of electrical conductors and equipment within or on buildings or other structures such as yards, carnival, parking lots and industrial substations
  - **1.1.3** Wiring for connection to supply: Installations of conductors that connect to the supply of electricity
  - **1.1.4** Other wiring: Installations of other outside conducts on the premises
- **1.2** Optical fiber: Installations of optical fiber cable where such installations are made along with electric conductors.

1.3 Excluded Work

1.4 Generation, transmission and distribution installations such as:

1.4.1 Repairing overhead or underground lines or repairing feed-water pump for the boiler in a generating plant.

1.4.2 Line-Clearance tree trimming and replacing utility poles.

1.4.3 Work on electric utilization circuits in a generating plant.

1.5 Generation equipment or circuits that present greater hazards than those posed by the utilization equipment or circuits.

1.6 Communications installations.

1.7 Installations in vehicles such as:

1.7.1 Ships, watercraft, railway rolling stock, aircraft and automotive vehicles other than mobile homes and recreational vehicles.

1.8 Railway installations

2.0 TRAINING

2.1 Complete training will be given to those employees who face or may reasonably be expected to face a risk of electrical shock, so they become qualified. Unqualified employees will be trained to the extent that they are aware of electrical hazards and can use adequate safety measures to avoid electrical hazards.

2.2 Those employees with the following job classifications are:

2.2.1 Supervisors

2.2.2 Electrical and electronic technicians

2.2.3 Electricians

2.2.4 Industrial machine operators

2.2.5 Material handling equipment operators

2.2.6 Mechanics and repairers (maintenance)

2.2.7 Others:_____

_____

2.3 Training may be of the on-the-job or classroom type that pertains to the employees' respective job assignments.

2.4 Training will include the following information:

2.4.1 Skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment

2.4.2 Skills and techniques necessary to determine the nominal voltage of exposed live parts

2.4.3 Safe clearance distances and voltages to which the qualified employee will be exposed

2.4.4 Personal protective clothing and other protective devices, insulating, shielding and tools required to eliminate electrical shock

3.0 WORK PRACTICES

3.1 Deenergized Parts

3.1.1 Live parts to which an employee may be exposed shall be deenergized before employee works on or near them, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations.

3.2 Energized Parts

3.2.1 If exposed live parts cannot be deenergized, other safety practices shall be employed to protect against contact with any other conductive parts (human or not).

3.3 Only qualified personnel may work on equipment that cannot be deenergized.

Note: De-energized equipment that has not been locked out tagged out is to be considered energized equipment.

3.4 Overhead Lines

3.4.1 Ideally, overhead lines shall be deenergized and grounded or other protective measures shall be taken before work is started. Contact local power company to have this operation performed.

3.4.2 Work may be performed near overhead lines, by qualified employees, whether on the ground or elevated; and no conductive objects may approach (without approved insulating handles or other personal protective equipment) within these limitations.

3.4.1 Any tools being used around overhead lines MUST have approved insulating handles.

Table 1

Voltage Range (phase to phase)	Minimum Approach Distance
300V and less	Avoid contact
Over 300V, not over 750V	1 foot
Over 750V, not over 2kV	1 foot 6 inches
Over 2kV, not over 15kV	2 feet
Over 15kV, not over 37kV	3 feet
Over 37kV, not over 87.5kV	3 feet 6 inches
Over 87.5kV, not over 121kV	4 feet
Over 121kV, not over 140kV	4 feet 6 inches

Work may be performed near overhead lines, by unqualified employees, whether on the ground or elevated; and no conductive objects may approach within these limitations:

Table 2

Voltages to Ground	Approach Distances
50kV or fewer	10 feet
Over 50kV	10 feet plus 4 inches for every 10kV over 50kV

3.5 Illumination

3.5.1 Sufficient illumination must be provided to all employees to perform work safety. Employees will not work near or blindly reach into areas which may contain energized parts without adequate light.

3.6 Conductive Equipment

3.6.1 Any conductive materials or equipment that is in contact with any part of an employee's body shall be handled in a manner that will prevent contacting exposed energized parts. If an employee must handle long dimensional equipment, work

practices will be employed (guarding, insulation, safe materials handling) to minimize electrical hazards.

3.7 Ladders

3.7.1 Portable ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized parts.

3.8 Vehicles or Mechanical Equipment

3.8.1 Equipment shall be operated so that a distance of 10 feet is maintained when voltage is 50kV and below, if above 50kV clearance shall increase by 4 inches for every 10kV over 50kV.

EXCEPTIONS INCLUDE:

-A vehicle in transit with its aerial structure lowered, clearance distance can be reduced to 4 feet. If voltage is over 50kV, then increase clearance 4 inches for each 10kV over the 50kV

-If approved insulating barriers are guarding the overhead line and not attached to the vehicle, distance should be maintained per barrier clearance rating.

-If aerial equipment is insulated, and work is performed by qualified personnel, the clearance between the uninsulated portion and power line may be reduced, check Table 1.

-Employees standing on the ground may not contact any equipment unless the employee is using personal protective equipment or equipment is located so no uninsulated part is closer than Table 2 clearance distances.

-Barricades shall be placed on ground around equipment that can be elevated to the point of contact with overhead lines, so if grounding does occur, employees will be protected against shock. The barricade distance is to be determined by ground resistivity and fault currents.

5.0 PORTABLE ELECTRIC EQUIPMENT

5.1 When using cord and plug-connected equipment including extension cords.

5.1.1 Equipment shall be handled in a manner which will not cause damage. Extension cords connected to equipment may not be used for raising or lowering the equipment. Extension cords may not be fastened with staples or hung in a fashion as could damage the outer jacket or insulation.

5.1.2 Equipment shall be visually inspected before use on any shift for external defects and for evident or internal damage. Equipment and extension cords shall remain connected once put into place and are not exposed to damage need not be visually inspected until relocated.

5.1.3 If a defect is found, the defective or damaged item shall be removed from service and not used until repairs and tests necessary to render the equipment safe have been made.

5.1.4 When an attachment plug is to be connected to a receptacle, the relationship of the plug and receptacle contacts shall be checked to ensure proper mating configurations.

6.0 GROUND TYPE EQUIPMENT

6.1 An extension cord used with grounding equipment shall contain an equipment grounding conductor.

6.2 Attachment plugs and receptacles may not be connected or altered which would prevent proper continuity of the grounding conductor at the point where plugs are attached to receptacles. Additionally, these devices may not be altered to allow the founding pole of a plug to be inserted into slots intended for connection to the current-carrying conductor.

6.3 Adapters which interrupt the continuity of the equipment grounding connection may not be used.

6.4 Equipment or cords that are used in high water or liquid areas must be approved for use in these locations.

6.5 Employees' hands must be dry before handling cords or equipment.

6.6 If the possibility exists that the connections are wet, employees must wear proper personal protective equipment, such as insulating gloves before handling.

6.7 Locking type connectors shall be properly secured after connection.

7.0 ELECTRIC POWER AND LIGHTING CIRCUITS

7.1 When routine opening and closing of circuits, load rated switches, circuit breakers, or other devices specially designed as a disconnecting means shall be used for opening, reversing or closing of circuits under load conditions. Cable connectors not of the load-break type, fuses, terminal lugs, and cable splice connections may not be used for such purposes, except in an emergency.

7.2 Reclosing circuits after protective device operation. After a circuit is deenergized by a circuit protective device, the circuit may not be manually reenergized until it has been determined that the equipment and circuit can be safely reenergized. The repetitive manual reclosing of circuit breakers or reenergizing circuits through replaced fuses is prohibited.

8.0 OVER CURRENT PROTECTION MODIFICATION

8.1 Over current protection of circuits and conductors may not be modified, even on a temporary basis beyond that allowed by 1910.304(e).

9.0 TEST INSTRUMENTS AND EQUIPMENT

9.1 Only qualified personnel may perform testing work on electric circuits or equipment. Test instruments including leads, cables, cords, probes, etc., shall be visually inspected for external damage. If damage is found, repairs will be made before it is put into use. Only approved and properly rated equipment will be used.

10.0 OCCASIONAL USE OF FLAMMABLE OR IGNITABLE MATERIALS

10.1 Where flammable materials are present only occasionally, electrical equipment capable of igniting them shall not be used, until measures are taken to prevent a hazardous condition from developing.

11.0 CONFINED OR ENCLOSED SPACES

11.1 When an employee works in a confined or enclosed space that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, barriers, or insulating materials as necessary to avoid inadvertent contact. Doors, hinged panels, etc. shall be secured to prevent swinging.

12.0 PROTECTIVE EQUIPMENT

12.1 Conductive Apparel

12.1.1 Watches, jewelry, rings, key chains, metalized aprons, metal headgear, etc. may not be worn if they might contact exposed energized parts.

12.2 Personal Equipment

12.2.1 Employees shall be provided and required to use personal protective equipment when working in areas where potential electrical hazards exist.

12.2.2 Personal equipment shall be maintained in a safe, reliable condition and shall be periodically inspected or tested as required by 1910.137.

12.2.3 If the insulating capability of protective equipment may be subject to damage during use, the insulating material shall be protected (i.e. leather covering over insulating pants.)

12.2.4 Insulating headgear shall be worn if there is a potential for head injury due to electrical shock or burn.

12.2.5 Protective eye or face gear shall be worn if there is danger of injury from electrical arcs or flashes or from flying object resulting from electrical explosion.

12.3 Tools

12.3.1 Employees shall use insulated tools or handling equipment of tools may come in contact with energized conductors or circuit parts. If the insulating capability of the tools is subject to damage, the insulating material shall be protected. Specific insulated fuse handling equipment shall be used when installing or removing fuses to energized equipment.

12.3.2 Ropes or other lines shall be nonconductive when used around energized parts.

12.3.3 Protective shield, barriers, or insulating materials shall be used to protect employees from shocks, burns or other electrically related injuries while that employee is working near exposed energized parts. When normally enclosed live parts are exposed for repair, they shall be guarded to protect unqualified persons from contact.

12.4 Warnings

12.4.1 Safety signs, tags, barricades and even an attendant or assistant personnel shall be used to warn employees about potential electrical hazards.

12.5 Housekeeping

12.5.1 Housekeeping duties (including the use of conductive liquids, steel wools, metalized cloth, etc.) will not be performed around energized parts. Barricades or other measures must be employed to prevent electrical contact.

12.6 Interlocks

12.6.1 Only qualified personnel and following precautions for working around energized parts will be allowed to defeat an interlock and then only temporarily while work is performed. The interlock system shall be returned to its operable condition when the work is completed.

13.0 DEENERGIZING EQUIPMENT

13.1 Procedures

13.1.1 ONLY qualified employees may perform lockout/tagout procedures. Safe procedures for deenergizing circuits and equipment shall be determined before

circuits or equipment is deenergized. For detailed procedures refer to company Lockout/Tagout Program.

14.0 REENERGIZING EQUIPMENT

14.1 ONLY qualified employees may perform reenergizing equipment. Please refer to detailed procedures in company Lockout/Tagout Program.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 102-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Emergency Action Plan

Purpose
This plan applies to all jobsite operations where employees may encounter emergencies such as fires, medical emergencies, and tornadoes.

Scope
The Emergency Action Plan applies to all personnel

Responsibilities
The Superintendent has the overall responsibility for the plan. The written program will be kept by electronic access. The Superintendent will also review and update the plan as and when necessary.

The Administrative Assistant will be the Emergency Coordinator at the Newkirk Novak headquarters. The Superintendent will be the will be the jobsite Emergency Coordinator.

The Emergency Coordinator's responsibilities include:
Identify and Post Emergency Contact List

Evacuation
Ensure shutdown and evacuation
Take head count and report to emergency services
Communicate with the employees periodically about the situation

Tornado
Ensure shutdown and orderly move to the respective shelter
Take a head count and ensure everyone's safety
Review and update the plan as and when necessary

Special Definitions

NOTE:
If advised of the distinct possibility that a tornado may strike the facility, any employee that would rather leave the premises instead of seeking shelter within the facility may do so. Employees wishing to leave shall notify their Supervisor and/or Manager before leaving.

Procedure

1.0 JOBSITE

1.1 Actions Upon Discovery of Emergency (Fire, Explosion, Accidents, and Natural Disaster)

1.1.1 All personnel in area of emergency should perform and assist with the following steps:

1.1.1.1 Evacuate the immediate area. Move quickly from the hazard area.

1.1.1.2 If subcontract employees or visitors are in the area, take command and avoid panic by assuring them that you know the correct procedures.

1.1.1.3 If possible, shut down operations, close doors and windows, if applicable.

1.1.1.4 Locate the nearest safe phone, cell phone, or use voice communication to inform all employees about the emergency and location.

1.1.1.5 Locate the nearest safe phone or use cell phone to call the Fire Department (911) to report the situation. When the dispatcher answers, give the following information:

1.1.1.5.1 Your name, the jobsite location and address

1.1.1.5.2 The phone number you are calling from

1.1.1.5.3 The building number and location in the building, if applicable

1.1.1.5.4 The type of emergency and if there are any known injuries

1.1.1.5.4.1 Stay on the phone to answer questions - DO NOT HANG UP until the dispatcher does.

1.1.2 Be available to the Emergency Coordinator to give information about the situation as needed.

1.2 Actions Upon Hearing Evacuation Alarm or Announcement

1.2.1 Evacuate the area via the nearest SAFE exit in an orderly manner

1.2.2 It is every employee's responsibility to assist visitors and subcontract employees.

1.2.3 Avoid panic by taking control and assuring them of your knowledge of the procedures

1.2.4 Assemble in the designated area. (See jobsite evacuation map)

1.2.5 Outdoor evacuation point(s):

1.2.5.1 Job Trailer or Truck is the designated outdoor evacuation point.

1.2.6 Always assemble in the outdoor evacuation point first**.** Await further instructions from the Emergency Coordinator. If necessary, the Emergency Coordinator will communicate instructions for movement to alternate locations.

1.2.7 Assist the Superintendent in quickly obtaining an accurate head count of all employees, subcontract employees and visitors, including non-employees.

1.2.8 If there is an incomplete head count, NO ATTEMPT should be made to reenter the building.

1.3 Communications

1.3.1 The Emergency Coordinator will receive and transmit necessary information to the employee evacuation site either verbally or via radio.

1.3.2 The immediate Jobsite Superintendent will be responsible for communicating head count and other information to the Emergency Coordinator and for receiving information from the Coordinator and communicating to employees at the evacuation site.

2.0 MAIN OFFICE

2.1 Actions Upon Discovery of Emergency (Fire, Explosion, Accidents, and Natural Disaster)

2.1.1 All personnel in area of emergency should perform and assist with the following steps:

2.1.1.1 Evacuate the immediate area. Move employees quickly from the hazard area.

2.1.1.2 Company personnel are responsible for all contract employees and visitors. If contract employees or visitors are in the area, take command and avoid panic by assuring them that you know the correct procedures.

2.1.1.3 If possible, shut down operations, close doors and windows.

2.1.1.4 Locate the nearest fire alarm, if present, and activate the system on your way out.

2.1.1.5 Locate the nearest safe phone, cell phone, or use voice communication to announce the emergency and location. **Repeat the announcement** a second time if using a phone to announce the emergency.

2.1.1.6 Locate the nearest safe phone or use cell phone to call the Fire Department (911) to report the situation. When the dispatcher answers, give the following information:

2.1.1.6.1 Your name, the facility's name and address.

2.1.1.6.2 The phone number where you are calling.

2.1.1.6.3 The building number and location in the building, if applicable.

2.1.1.6.4 The type of emergency and if there are any known injuries.

2.1.1.6.5 Stay on the phone to answer questions - DO NOT HANG UP until the dispatcher does.

2.1.2 Be available to the Emergency Coordinator to give information about the situation as needed.

2.2 Actions Upon Hearing Evacuation Alarm or Announcement

2.2.1 Evacuate the area via the nearest SAFE exit in an orderly manner.

2.2.1.1 It is every employee's responsibility to assist visitors and contract employees.

2.2.1.2 Avoid panic by taking control and assuring them of your knowledge of the procedures.

2.2.1.3 Assemble in the designated area. (See facility evacuation map)

2.2.1.4 Always assemble in the outdoor evacuation point first. Wait for further instructions from the Emergency Coordinator. If necessary, the Emergency Coordinator will communicate instructions for movement to alternate locations.

2.2.1.5 Assist the department supervision in quickly obtaining an accurate head count of all employees, contract employees and visitors, including non-employees.

2.2.1.6 If there is an incomplete head count, **NO ATTEMPT should be made to reenter the building.**

2.3 Communications

2.3.1 The Emergency Coordinator will receive and transmit necessary information to the employee evacuation site either verbally or via radio.

2.3.2 The immediate Jobsite Superintendent and the headquarters receptionist will be responsible for communicating head count and other information to the Emergency Coordinator and for receiving information from the Coordinator and communicating to employees at the evacuation site.

3.0 RECEIPT OF A BOMB THREAT (OFFICE AND/OR JOBSITE)

3.1 Immediately following a Bomb Threat call, notify the Emergency Coordinator.

3.2 If the Emergency Coordinator deems the threat credible, he/she will notify all personnel at the jobsite or office to evacuate the jobsite/building.

3.3 Then call the Fire Department (911) to report the situation. When the dispatcher answers, give the following information:

3.3.1 Your name, the jobsite's location and address

3.3.2 The phone number from where you are calling

3.3.3 The building number and location in the building, if applicable

3.3.4 The type of emergency (bomb threat)

3.3.4.1 Stay on the phone to answer questions - DO NOT HANG UP until the dispatcher does.

4.0 VERBAL ALL-CLEAR

4.1 After an actual emergency or upon conclusion of a test, a verbal "all-clear" will be announced by the Emergency Coordinator at which time employees may return to their places of work.

4.2 If the jobsite has been damaged in any way, or employees are not able to re-enter for a period of time, the Emergency Coordinator will be responsible for administering the situation.

5.0 MEDICAL EMERGENCIES

5.1 In cases of medical emergency where no evacuation is necessary, all first aid will be provided by the company trained personnel, if any, or Fire Department. Call **911** for assistance. Notify the Emergency Coordinator of the emergency situation.

6.0 SHELTER AREAS

6.1 Tornado Watch

6.1.1 The tornado watch condition issued by the local city department will be communicated to all personnel.

6.1.2 Upon receipt of the tornado watch condition either through radio or city siren, the jobsite Superintendent will notify all personnel working at the jobsite.

6.1.3 Employees should prepare to shut down operations if the condition is upgraded to a Tornado Warning.

6.2 Tornado Warning

6.2.1 Office

6.2.1.1 Upon receipt of the tornado warning condition, the Emergency Coordinator will notify all personnel by voice communication.

6.2.1.2 All personnel will immediately shut down operations, if applicable.

6.2.1.3 Employees will then evacuate to the tornado shelter

6.2.1.4 Visitors and contract employees must be escorted to the shelter as well

6.2.1.5 Assist the Emergency Coordinator in quickly obtaining an accurate head count of all employees, contract employees and visitors

6.2.1.6 Employees should not leave the shelter until the weather alert gives an all-clear signal

6.2.1.7 If you are unable to get to a shelter, stay away from areas where there are chemicals, glass or storage racks. If possible, proceed to a central area such as a restroom/locker room. Crouch low and cover your head.

6.2.2 Jobsite

6.2.2.1 Upon receipt of the tornado warning either through radio or city siren, notify all personnel working at the jobsite.

6.2.2.2 If there is a good location within the jobsite, seek refuge. If not, get to a nearby tornado shelter as quickly as possible.

6.2.2.3 Employees should not leave the shelter until the weather alert gives an all-clear signal.

7.0 EARTHQUAKE

7.1 If indoors, stay indoors. Get under a desk or other heavy object or stand in a corner.

7.2 If outdoors, get into an open area away from windows, outside walls and power lines.

7.3 After the quake has subsided, check for injured personnel. Do not move seriously injured individuals unless they are in immediate danger.

7.4 Wait for further instructions from the Emergency Coordinator.

Emergency Action Plan

N#-####

NNCP Project Number

PROJECT NAME

Project Name

DATE APPROVED

NNCP Approval Date

Emergency Action Plan

The Emergency Action Plan (EAP) defines the procedures to be used when responding to emergency situations on this job site. Every Contractor must be aware of and use the procedures in this plan should events occur that are outlined. Failure to act in the prescribed manner can create confusion, leading to putting people and materials at risk and delaying or preventing the initiation of appropriate actions to resolve the emergency.

All emergencies, regardless of type, must be reported to the project management team as soon as the required emergency notifications have been made.

Emergencies include:

- Injury to one or more workers
- Weather related events such as, tornados and severe thunderstorms.
- Other emergency events, such as, fire, earthquake, structure failure, crane collapse, bomb threat, chemical spill, extended power loss, etc.

Each of these types of events must be responded to in a timely and correct manner.

Workers must be made aware of and trained in their role should there be an emergency. The following is contact information for key project team members for reporting an emergency. Please contact them in the following order:

First / Last Name	Title	Phone Number
NAME	**Superintendent**	**(###) ###-####**
NAME	**Safety Coordinator**	**(###) ###-####**
NAME	**Project Manager**	**(###) ###-####**

Injuries that are incapacitating or life threatening will require a Superintendent or Foreman in the nearby area to call 911 immediately and direct the emergency to the appropriate location at the project site. Directly following the call to 911 the Superintendent, Foreman, or trades workers with knowledge of the issue shall contact a member of the Newkirk Novak team.

All workers must be trained in the requirements of the project EAP, with training initially occurring at project worker orientation with updates provided at the first weekly toolbox talk of each quarter. A tool box talk sheet shall be used to document updated training.

MEDICAL EMERGENCIES

All injuries, regardless of how minor, must be reported to ***Superintendent Name and/or PM Name*** as soon as possible and as required by the Claim Management and Reporting Procedures.

Workers with first aid and minor injuries that are not life-threatening but in need of medical treatment, must be transported to ***Nearest Clinic Name w/ full address*** accompanied by a Superintendent, or Foreman or their designee from the company employing the injured worker(s).

In the event of an incapacitating or life-threatening injury, call 911 requesting an ambulance. Stay on the line until the dispatcher tells you to hang up. If in doubt, call 911. The closest Hospital for the project is the ***Nearest Hospital Name w/ full address***

The Foreman should ensure that personnel are dispatched to the project gate to assist emergency medical personnel in getting to the injured worker.

EMERGENCY EVACUATION PROCEDURE

When the emergency signal, consisting of air horn is enacted, all employees shall immediately cease work, secure all equipment, and proceed directly to the designated assembly area parking area, the subcontractor office and remain there until further instructions are assigned by the Supervisor.

Evacuation/Assembly Area:

During any evacuation, unless otherwise directed, the primary assembly is in the parking lit area. Do not leave the area until you have notified your Supervisor and have received instructions regarding returning to work. In the event the primary assembly area is hazardous, the secondary assembly area will be at subcontractors' office.
(see attached map). – *(Need to provide project specific map as back-up showing the primary and secondary assembly areas along with emergency contacts and other pertinent information. Post this sheet in the job office/trailer as well as on site as needed.)*

Superintendents / Foremen for each Contractor / Subcontractor on site will be checking to ensure all their workers are safely out of the hazard zone. Do not leave the assembly area until you are accounted for and receive instructions from your Supervisor or Safety representative.

Fire

In the event of a fire your first thought should be to put it out if you can do so safely. Fire extinguishers are provided throughout the site. If you are not sure that you can put out the fire, don't try. Immediately contact the Newkirk Novak Superintendent.

Earthquake

While earthquakes may not often be experienced in this project region, they can happen and could be severe. If an earthquake occurs, immediately evacuate to the designated assembly area and report to your Supervisor.
DO NOT LEAVE THE ASSEMBLY AREA UNTIL TOLD TO DO SO BY YOUR SUPERVISOR OR THE SAFETY MANAGER.

Severe Thunderstorm

In the case of a severe thunderstorm, evacuation will be on a case-by-case basis. If there is lightning in the area, the lead Superintendent(s) and the site Foremen, in conjunction with the Site Safety Manager, will determine if work must be halted and evacuation is necessary for the safety of the workers.

Structural/Crane Collapse

Should there be a catastrophic collapse of a structure or a crane, evacuate immediately to the primary assembly area.

If a worker is injured or trapped, you may assist them if doing so will not cause the situation to become worsened. If you are not sure, wait for rescue personnel to arrive and perform the rescue.

Bomb Threat/Explosion

In the event you receive a bomb threat, regardless of how you receive it, notify your immediate supervisor who will then notify the lead Superintendent. The lead Superintendent will initiate a general evacuation of the site.

If an explosion occurs, even a small one, immediately shut down your work and evacuate to the primary assembly area. Do not remain in the area as there may be secondary explosions or structural failure of existing buildings.

Hazardous material exposure/spills

Subcontractors who use chemical compounds for construction purposes will have SDS's present and available on site for all chemicals, regardless of quantity. SDS's must be clear and legible. In the event a worker is exposed to a significant quantity of a particular chemical and is transported to a medical facility, the SDS for that material must be faxed to the medical provider.

Contractors / Subcontractors that have chemical compounds on hand for construction purposes are required to have a spill kit. The spill kit must be able to handle at least the contents of at least one of the largest containers in which the material is packaged. Cleanup of the spilled chemical will be done in accordance with the manufacturer's directions.

When a spill of any size occurs, contact the lead Superintendent, and the Safety Manager. Tell them what has been spilled and how much. **DO NOT ATTEMPT CLEAN UP AND DISPOSAL BEFORE MAKING THIS NOTIFICATION!** Containment of large spills may be started while also contacting the individuals indicated. Only workers trained to use spill kits should attempt to do so. If possible, protect the area from other workers entering and becoming contaminated or tracking the chemical into other parts of the site.

Disposal of hazardous waste must be done in accordance with all federal, state and local regulations. Copies of invoices, bills of lading, etc., indicating how and where the material / waste were disposed of, will be provided to the General Contractor Safety Manger, upon completion of the disposal process.

UTILITY COMPANY & EMERGENCY CONTACTS

Electric:	***Evergy***	***800-778-9140***
Traffic:	***City of ????***	***###-###-####***
Water:	***City of ????***	***###-###-####***
Gas / Petroleum:	***???????***	***###-###-####***
Communication:	***??????***	***###-###-####***
Other(s):	***Fire Marshall***	***###-###-####***
Other(s):	***Police (911)***	***###-###-####***

Emergency Contact list SOP 203
Project Name:

Project Emergency Contacts

Name	Title	Phone Number

	Company Name	Phone Number	Address
Fire Department		911	
Police Department		911	
Hospital		911	
Ambulance		911	
Utility Locates			
Gas Company			
Electric Company			
Water Department			

*Post next to the phone and post inside a window that is visible from the outside

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 131 **Next Scheduled Reviews: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Excavation, Trenching and Shoring Safety

Purpose
One of the preventable hazards of construction work is the danger of trench cave-ins. Other hazards associated with trenches include contact with numerous underground utilities, hazardous atmospheres, water accumulation, and collapse of adjacent structures. For these reasons, it is the policy at Newkirk Novak to permit only trained and authorized personnel to create or work in excavations.

Scope
All employees required to perform excavating, trenching, and shoring work

Responsibilities
The Superintendent or their designee is responsible for developing and maintaining the written excavation procedures. These procedures are kept at the following location(s): In the jobsite trailers and in company vehicles.

The excavation procedures are administered under the direction of our competent persons, who 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. The following employees are considered to be competent persons for our company: The jobsite Superintendent.

Employees will be trained annually on the safety and health aspects of excavation, trenching and shoring. Training will consist of excavation and trenching requirements, competent person requirements, hazards and controls, and protective systems.

Special Definitions
Unconfined compressive strength means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods

Type A soil means cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.

However, no soil is type A if the soil is fissured; or the soil is subject to vibration from heavy traffic, pile driving, or similar effects; or the soil has been previously disturbed; or the soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or the material is subject to other factors that would require it to be classified as a less stable material.

Type B soil means cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam. It also includes previously disturbed soils except those which would otherwise be classed as Type C soil, soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or dry rock that is not stable; or material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type C soil means cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or granular soils including gravel, sand, and loamy sand; or submerged soil or soil from which water is freely seeping; or submerged rock that is not stable, or material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

Procedure

1.0 PLANNING

1.1 Prior to opening an excavation, underground installations (e.g., sewer, communication lines, water, fuel, electric lines) shall be located and protected from damage or displacement.

1.2 Utility companies and other responsible authorities shall be contacted to locate and mark the locations and, if they so desire, direct or assist with protecting the underground installations.

2.0 EXCAVATION INSPECTION AND TESTING

2.1 When persons will be in or around an excavation, the competent person shall inspect the excavation, the adjacent areas, and protective systems daily, and as needed throughout the work shifts. The competent person shall also inspect the excavation after every rainstorm or other hazard-increasing occurrence

2.2 If evidence of a situation that could result in possible cave-ins, slides, failure of protective systems, hazardous atmospheres, or other hazardous condition is identified, exposed workers shall be removed from the hazard and all work in the excavation stopped until all necessary safety precautions have been implemented.

2.3 In locations where oxygen deficiency or gaseous conditions are known or suspected, air in the excavation shall be tested prior to the start of each shift or more often as conditions warrant. The company owns a four gas confined space meter to evaluate air quality.

3.0 PROTECTIVE SYSTEMS

3.1 The sides of all excavations in which employees are exposed to danger from moving ground shall be guarded by a support system, sloping or benching of the ground, or other equivalent means.

3.2 Excavations less than 5 ft (1.5 m) in depth and which a competent person examines and determines there to be no potential for cave-in do not require protective systems

3.3 Sloping or benching of the ground shall be in accordance with OSHA guidelines

3.4 Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to the system.

3.5 Shoring shall be used for unstable soil or depths >5 ft (>1.5 m) unless benching, lay back, or other acceptable plan is implemented.

4.0 STABILITY OF ADJACENT STRUCTURES

4.1 Except in stable rock, excavations below the level of the base of footing of any foundation or retaining wall shall not be permitted unless:

4.1.1 A support system, such as underpinning, is provided to ensure the stability of the structure and to protect employees involved in the excavation work or in the vicinity thereof; or

4.1.2 A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation and that the excavation will not pose a hazard to employees.

4.2 If the stability of adjoining buildings or walls is endangered by excavations, shoring, bracing, or underpinning designed by a qualified person shall be provided to ensure the stability of the structure and to protect employees.

4.3 Sidewalks, pavements, and related structures shall not be undermined unless a support system is provided to protect employees and the sidewalk, pavement, or related structure.

4.4 Where it is necessary to undercut the side of an excavation, overhanging material shall be safely supported.

5.0 PROTECTION FROM WATER

5.1 Diversion ditches, dikes, or other means shall be used to prevent surface water entering an excavation and to provide good drainage of the area adjacent to the excavation.

5.2 Employees shall not work in excavations in which there is accumulated water or in which water is accumulating unless the water hazards posed by accumulation is controlled.

5.2.1 Freezing, pumping, drainage, and similar control measures shall be planned and directed by a registered engineer. Consideration shall be given to the existing moisture balances in surrounding soils and the effects on foundations and structures if it is disturbed.

5.2.2 When continuous operation of ground water control equipment is necessary, an emergency power source shall be provided. Water control equipment and operations shall be monitored by the competent person to ensure proper operation.

6.0 PROTECTION FROM FALLING MATERIAL

6.1 Employees shall be protected (by scaling, ice removal, benching, barricading, rock bolting, wire mesh, or other means) from loose rock or soil that could create a hazard by falling from the excavation wall: special attention shall be given to slope that may be adversely affected by weather, moisture content, or vibration.

6.2 Materials, such as boulders or stumps, that may slide or roll into the excavation shall be removed or made safe.

6.3 Excavated material shall be placed at least 2 ft (0.6 m) from the edge of an excavation or shall be retained by devices that are sufficient to prevent the materials from falling into the excavation. In any case, material shall be placed at a distance to prevent excessive loading on the face of the excavation.

7.0 MOBILE EQUIPMENT AND MOTOR VEHICLE PRECAUTIONS

7.1 When vehicles or mobile equipment are used or allowed adjacent to an excavation, substantial stop logs or barricades shall be installed. The use of a ground guide is recommended.

7.2 Workers shall stand away from vehicles being loaded or unloaded to avoid being struck by spillage or falling materials.

7.3 Excavating or hoisting equipment shall not be allowed to raise, lower, or swing loads over personnel in the excavation without substantial overhead protection.

7.4 Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at lower levels are adequately protected from the hazard of falling material or equipment.

7.5 When operations approach the location of underground utilities, excavation shall progress with caution until the exact location of the utility is determined. Workers shall be protected from the utility and the utility shall be protected from damage or displacement.

7.6 Employees shall wear a harness with a lifeline securely attached to it when entering excavations classified as confined spaces or that otherwise present the potential for emergency rescue.

8.0 SAFE ACCESS

8.1 Protection shall be provided to prevent personnel, vehicles, and equipment from falling into excavations. Protection shall be provided according to the following hierarchy.

8.1.1 If the excavation is exposed to members of the public (e.g., other than those individuals engaged in project-specific work at the site) or vehicles or equipment, then Class I perimeter protection is required;

8.1.2 If the excavation does not meet the requirements for Class I perimeter protection but is routinely exposed to employees, and either is deeper than 6 ft (1.8 m) or contains hazards (e.g., impalement hazards, hazardous substances), then Class II perimeter protection is the minimum protection required. When workers are in the zone between the warning barricades/flagging and the excavation, they shall be provided with fall protection as specified in Section 21;

8.1.3 If the excavation does not meet the requirements for either Class I or Class II perimeter protection, then Class III perimeter protection is the minimum protection required.

8.2 All wells, calyx holes, pits, shafts, etc., shall be barricaded or covered.

8.3 Excavations shall be backfilled as soon as possible. Upon completion of exploration and similar operations, test pits, temporary wells, calyx holes, etc., shall be backfilled immediately.

8.4 Walkways or bridges with standard guardrails shall be provided where people or equipment are required or permitted to cross over excavations.

8.5 Where personnel are required to enter excavations over 4 ft (1.2 m) in depth, sufficient stairs, ramps, or ladders shall be provided to require no more than 25 ft (7.6 m) of lateral travel.

8.5.1 At least two means of exit shall be provided for personnel working in excavations. Where the width of the excavation exceeds 100 ft (30.4 m), two or more means of exit shall be provided on each side of the excavation.

8.5.2 When access to excavations in excess of 20 ft (6 m) in depth is required, ramps, stairs, or mechanical personnel hoists shall be provided.

8.6 Ramps

8.6.1 Ramps used solely for personnel access shall be a minimum width of 4 ft (1.2 m) and provided with standard guardrails.

8.6.2 Ramps used for equipment access shall be a minimum width of 12 ft (3.6 m). Curbs not less than 8-in x 8-in (20.3-cm x 20.3-cm) timbers, or equivalent protection, shall be provided. Equipment ramps shall be designed and constructed in accordance with accepted engineering practice.

8.7 Ladders used as access ways shall extend from the bottom of the excavation to not less than 3 ft (0.9 m) above the surface.

9.0 SLOPING AND BENCHING

9.1 Sloping or benching of the ground shall be in accordance with one of the systems outlined below:

9.1.1 Option 1 - For excavations less than 20 ft (6 m) in height, the maximum slope shall be 34° measured from the horizontal (1-1/2 horizontal to 1 vertical)

9.1.2 Option 2 – Sloping as outlined in OSHA Appendices A or B (tables and figures B.x below)

9.1.3 Option 3 – Tabulated design criteria for shoring, shields, or other support systems

9.1.4 Option 4 - Design by a registered professional engineer

9.1.4.1 The identity of the registered professional engineer who approved the data shall be known.

9.1.4.2 The sloping or benching system shall be designed by a registered engineer. At least one copy of the design shall be maintained at the job site during excavation.

10.0 SUPPORT SYSTEMS

10.1 Support systems shall be in accordance with one of the systems outlined below:

10.1.1 Designs drawn from manufacturer's tabulated data shall be in accordance with all specifications, limitations, and recommendations issued or made by the manufacturer.

10.1.1.1 Deviation from the specifications, recommendations, and limitations are only allowed after the manufacturer issues specific written approval.

10.1.1.2 A copy of the manufacturer's specifications, recommendations, and limitations (and the manufacturer's approval to deviate from these, if required) shall be in written form and maintained at the job site during excavation

10.1.2 Designs shall be selected from and be in accordance with tabulated data (such as tables and charts). At least one copy of the tabulated data shall be maintained at the job site during excavation. The tabulated data shall include:

10.1.2.1 Identification of the parameters that affect the selection of the protective system drawn from such data

10.1.2.2 Identification of the limits of use of the data

10.1.2.3 Explanatory information as may be necessary to aid the user in correctly selecting a protective system from the data

10.1.2.4 The identity of the registered professional engineer who approved the data

10.2 Materials and equipment used for protective systems

10.2.1 Materials and equipment shall be free from damage or defects that might impair their proper function.

10.2.2 Manufactured materials and equipment shall be used and maintained in a manner consistent with the recommendations of the manufacturer and in a manner that will prevent employee exposure to hazards.

10.2.3 When material or equipment is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use.

10.3 Installation and removal of support systems

10.3.1 Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, or other predictable failure.

10.3.2 Support systems shall be installed and removed in manners that protect employees from cave-ins, structural collapses, or from being struck by members of the support system.

10.3.3 Individual members of a support system shall not be subjected to loads exceeding those for which they were designed to withstand.

10.3.4 Before temporary removal of individual members, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.

10.3.5 Removal shall begin at and progress from the bottom of the excavation. Members shall be released slowly as to note any indication of possible failure of the remaining members or possible cave-in of the sides of the excavation.

10.3.6 Backfilling shall progress together with the removal of support systems from excavations.

10.4 Shield systems

10.4.1 Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.

10.4.2 Employees shall be protected from the hazard of cave-ins when entering or exiting the area protected by shields.

10.4.3 Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.

10.5 Additional requirements for trenching

10.5.1 Installation of support systems shall be closely coordinated with excavations of trenches.

10.5.2 Bracing or shoring of trenches shall be carried along with the excavation.

10.5.3 Backfilling and removal of trench supports should progress together from the bottom of the trench. Jacks or braces shall be released slowly and, in unstable soil, ropes shall be used to pullout the jacks or braces from above after personnel have cleared the trench.

10.5.4 Excavation of material to a level no greater than 2 ft (0.6 m) below the bottom of the members of a trench support system (including a shield) shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

TABLE B-1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90º)
TYPE A (2)	3/4:1 (53º)
TYPE B	1:1 (45º)
TYPE C	1 ½:1 (34º)

Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63º) is allowed in excavations in Type A soil that are 12 feed (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53º).

Footnote(3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

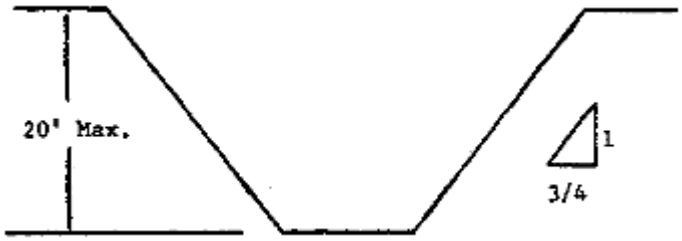
Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

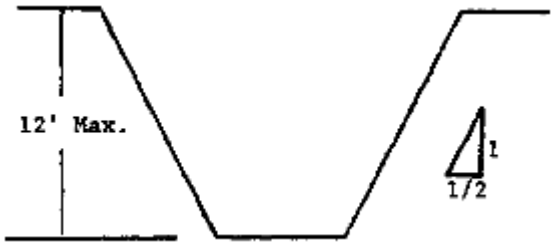
B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



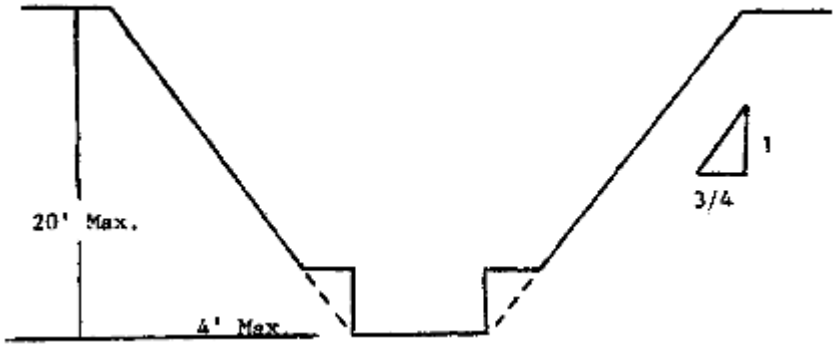
SIMPLE SLOPE -- GENERAL

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

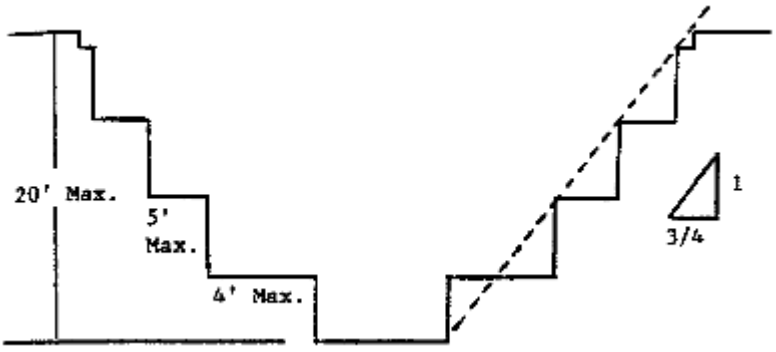


SIMPLE SLOPE -- SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 3/4 to 1 and maximum bench dimensions as follows:

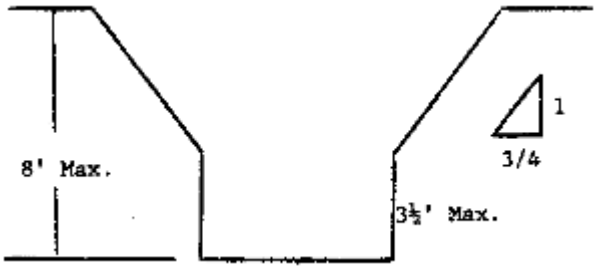


SIMPLE BENCH



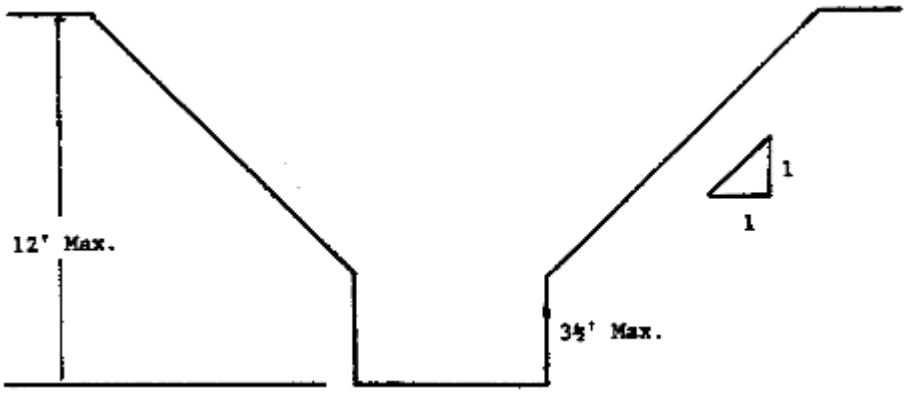
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.



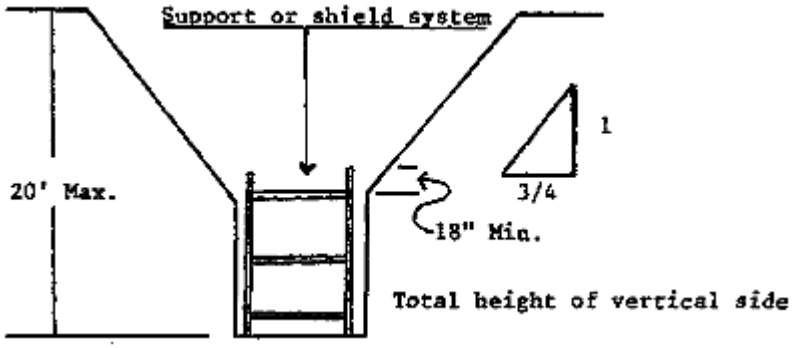
UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH)

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH)

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

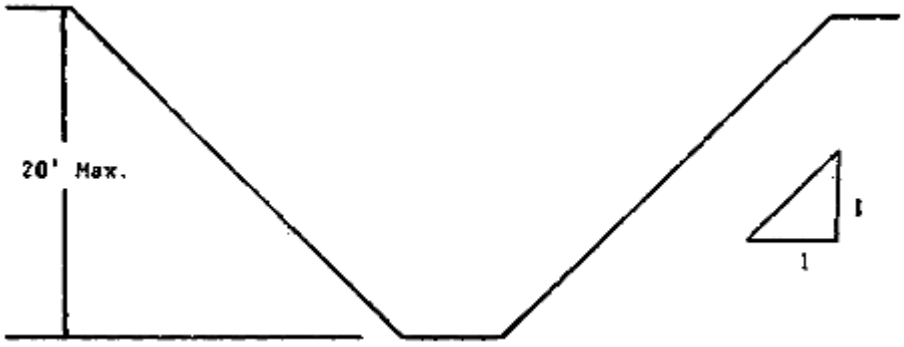


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under § 1926.652(b).

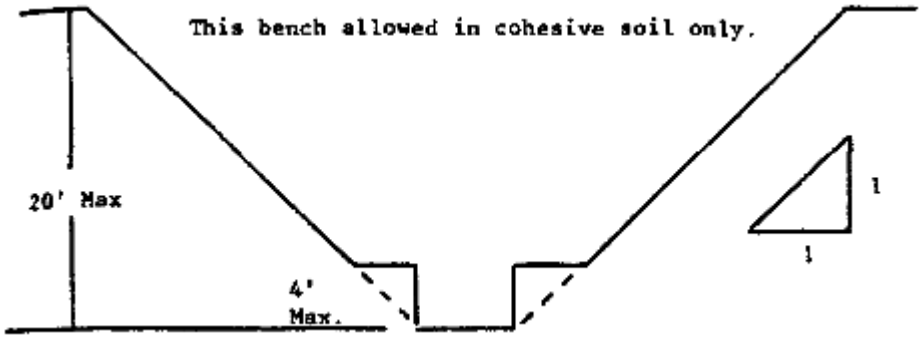
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

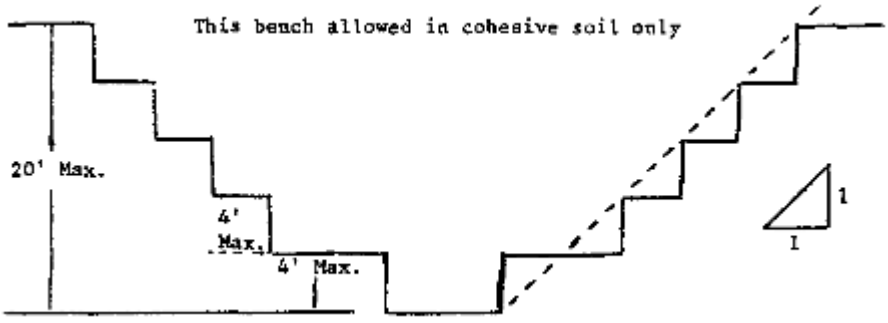


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

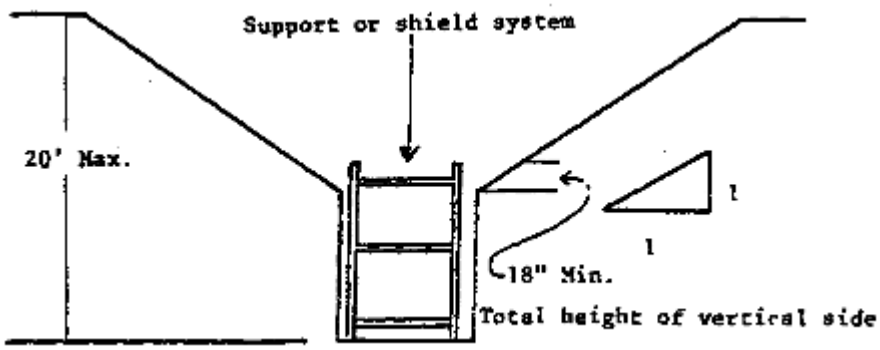


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

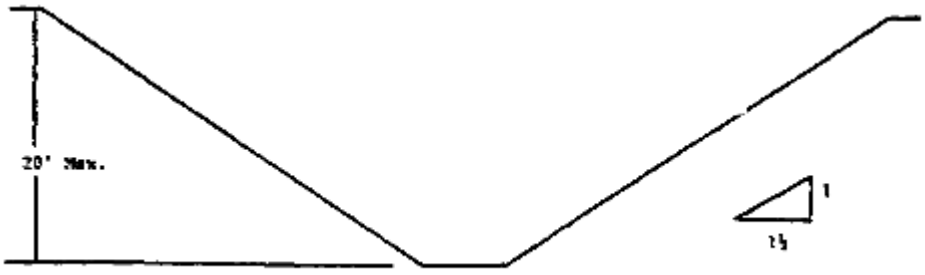


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

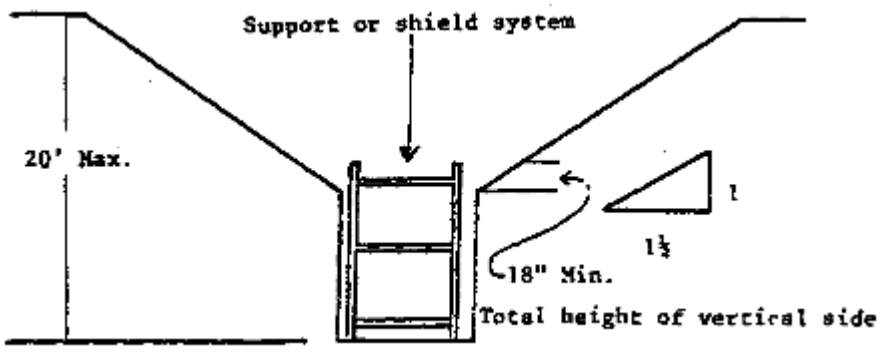
B-1.3 Excavations Made in Type C Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

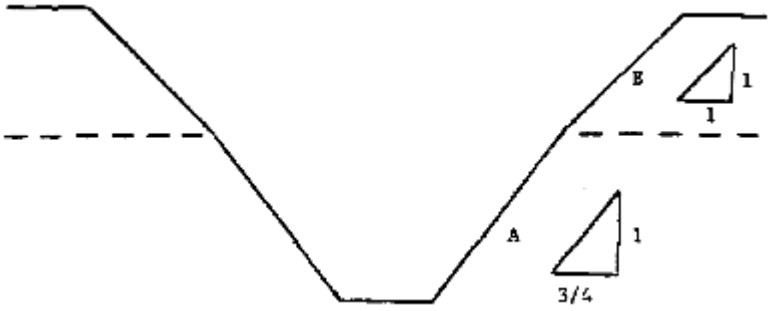


VERTICAL SIDED LOWER PORTION

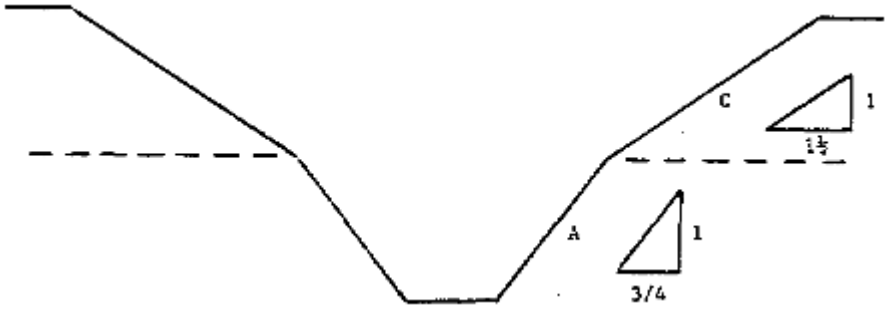
3. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.4 Excavations Made in Layered Soils

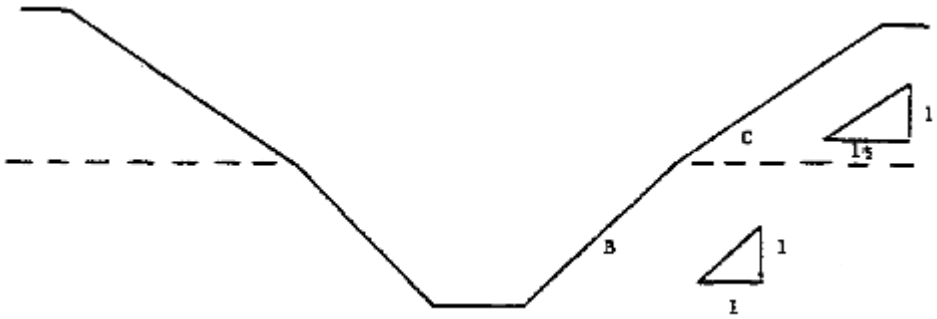
1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.



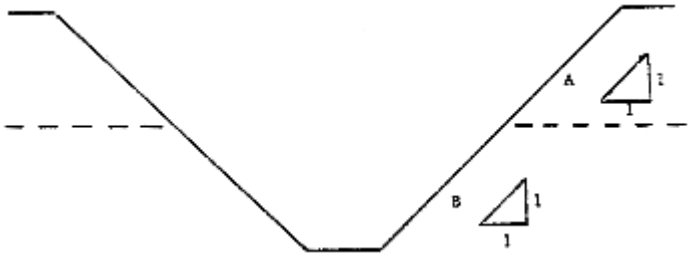
B OVER A



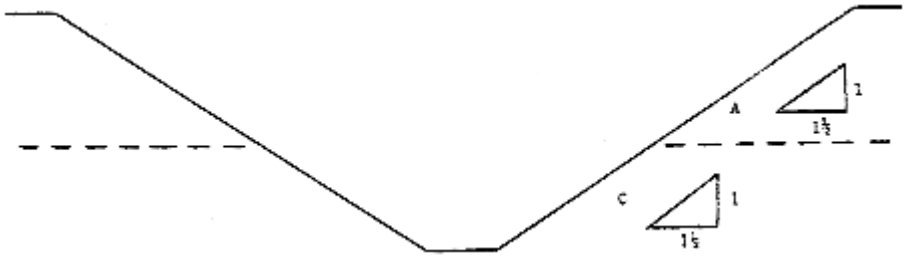
C OVER A



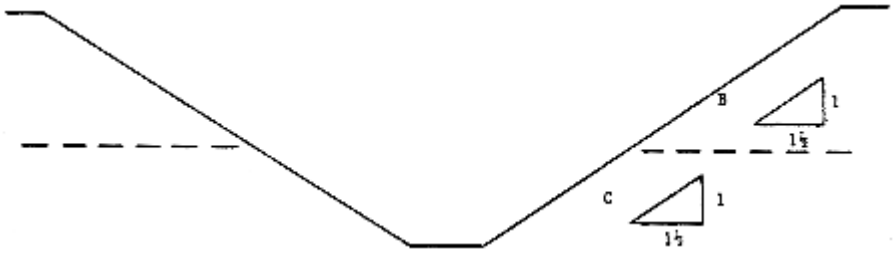
C OVER B



A OVER B



A OVER C



B OVER C

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 109-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Fall Protection - Construction

Purpose
This program is written to address employees and their subcontractors, if any, in complying with OSHA's Fall Protection requirements, (29 CFR 1926.500 to 503). Newkirk Novak will require the use of fall protection systems which is necessary to prevent employees from falling off, onto or through working levels and to protect employees from falling objects. All employees have the responsibility to work safely on the job.

Ensure that each employee is trained and made aware of the safety provisions, which are to be implemented by this plan prior to the start of work operations.

Scope
This plan sets forth requirements and criteria for fall protection in construction workplaces covered under 29 CFR part 1926. The provisions of this subpart does not apply when employees are making inspection, investigation, or assessment of workplace conditions prior to the actual start of construction work or after all construction work has been completed.

Responsibilities
The Superintendent has the overall responsibility for this program.

The Job-Site Superintendent is responsible for:

Completing the Fall Protection Plan Checklist for each activity that requires fall protection at the job-site

Ensuring all employees (including subcontractors) implement the recommended fall protection systems

Ensuring all employees (including subcontractors) are trained in the proper use of fall protection systems

Assisting employees in coming up with alternatives where conventional fall protection systems or recommended fall protection systems cannot be used

The employee is responsible for:

Implementing the fall protection systems recommended by the job-site Superintendent or the competent person

Notifying the Superintendent of the job activities that require fall protection

Giving suggestions to the Superintendent where conventional fall protection systems cannot be used or where the recommended system is not feasible to implement

Aborting activities when it becomes unsafe to working at heights such as high winds, lightning, heavy rain, snow, and sleet

Taking care of the fall protection systems provided for use such as harnesses and lanyards, and safety nets

Reporting unsafe acts, near misses, and accidents to the Superintendent immediately

Special Definitions

Anchorage means a secure point of attachment for lifelines, lanyards or deceleration devices.

Body belt (safety belt) means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness means straps which may be secured about the employee in a manner that will distribute the fall arrest forces 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 means any device for holding the body belt or body harness closed around the employee's body.

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

Connector means 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 body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

Controlled Access Zone (CAZ) means 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 and access to the zone is controlled.

Dangerous equipment means 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 means 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 means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the locations of an employee's body belt or 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 means 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 means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Free fall means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free fall distance means the vertical displacement of the fall arrest attachment point on the employee's body belt or 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 or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail system means a barrier erected to prevent employees from falling to lower levels.
Hole means 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 means that 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 means a flexible line of rope, wire rope, or strap, which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Leading edge means 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 means 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 a personal fall arrest system to the anchorage.

Lower levels mean those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Mechanical equipment means all motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts.

Opening means a gap or voids 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Overhand bricklaying and related work means 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 means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning Device system means 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.

Rope Grab means 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.

Safety-monitoring System means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-retracting Lifeline / Lanyard means 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.

Snap Hook means a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snap hooks are generally one of two types:

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
The non-locking type with a self-closing keeper, which remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snap hook as part of personal fall arrest systems and positioning device systems is prohibited.

Toe Board means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Unprotected Sides and Edges mean 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 (1.0 m) high.

Walking / Working Surface means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Work Area means that portion of a walking/working surface where job duties are being performed.

Procedure

1.0 All fall protection systems selected for each application will be installed and/or used before an employee is allowed to go to work in an area that necessitates the protection. The job-site Superintendent is responsible for its implementation.

2.0 The authorized employees (competent persons) determine if all walking/working surfaces on which our employees work have the strength and structural integrity to support the employees.

3.0 DUTY TO PROVIDE FALL PROTECTION

3.1 Newkirk Novak has the duty to provide fall protection by identifying the need to work at levels that expose them to falls of six feet or more and to plan work activities accordingly.

4.0 WORKSITE ASSESSMENT AND FALL PROTECTION SYSTEM SELECTION

4.1 There are situations at the job-sites that will require fall protection. This fall protection plan is intended to anticipate those particular fall hazards to which our employees may be exposed. Specifically, Newkirk Novak will:

4.1.1 Inspect the area to determine what hazards exist or may arise during the work

4.1.2 Identify the hazards and select the appropriate measures and equipment

4.1.3 Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions

4.1.4 Ensure employees follow procedures given and understand the training provided

4.1.5 Apprise themselves of the steps that the subcontractors have taken to meet their fall protection requirements.

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

5.0 UNPROTECTED SIDES AND EDGES

5.1 Each employee must be protected when they are exposed to falls from unprotected sides and edges on a walking/working surface (horizontal and vertical) which is 6 feet or more above a lower level.

5.2 Newkirk Novak will choose from the following fall protection means for unprotected sides and edges:

5.2.1 Guardrails, safety nets, and/or personal fall arrest systems.

5.3 Newkirk Novak maintains the system(s) chosen until all work has been completed or until the permanent elements of the structure are in place, which will eliminate the exposure to falling hazard

6.0 ROOFING WORK ON LOW-SLOPE ROOFS (4/12 or less)

6.1 Any employee engaged in roofing activities on low-slope roofs, with unprotected sides and edges 6 feet or more above lower levels will be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50-feet or less in width the use of a safety monitoring systems alone is permitted

7.0 STEEP ROOFS (greater than 4/12)

7.1 Each employee on a steep roof with unprotected sides and edges 6 feet or more above lower levels will be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

8.0 LEADING EDGE WORK

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

8.2 Each employee on a walking/working surface 6 feet or more above a lower level where leading edges are under construction, but are not engaged in the leading edge work, will be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

8.3 Newkirk Novak presumes that it is feasible and will not create a greater hazard to implement at least one of the conventional fall protection systems for our leading edge work. If not, an alternate fall protection system will be developed and implemented.

9.0 HOIST AREAS

9.1 Each employee in a hoist area will be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems 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 will be protection from fall hazards by a personal fall arrest system.

10.0 HOLES

10.1 Each employee on walking/working surface will be protected from falling through holes more than 6 feet above lower levels by personal fall arrest systems, covers, or guardrail systems erected around such holes. This includes:

10.1.1 Tripping in or stepping into or through holes (including skylights)

10.1.2 Objects falling through holes (including skylights)

10.2 At job-sites where employees can trip, step into, step through a hole (including skylights), or an object could fall through a hole and strike a worker, Newkirk Novak uses covers to prevent such accidents.

11.0 FORMWORK AND REINFORCING STEEL

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

12.0 RAMPS, RUNWAYS, AND OTHER WALKWAYS

12.1 Newkirk Novak will equip all ramps, runways, and other walkways with guardrails when employees are subject to falling 6 feet or more to lower levels.

13.0 EXCAVATION

13.1 Each employee working at the edge of an excavation 6 feet or more in depth will be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier. The same applies to wells, pits, and shafts.

14.0 DANGEROUS EQUIPMENT

14.1 Each employee less than 6 feet above dangerous equipment will be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards. Also, the employee will be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

15.0 PRECAST CONCRETE ERECTION

15.1 Each employee engaged in the erection of precast concrete members and related operations such as grouting of precast concrete members, who is 6 feet or more above lower levels will be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. If this is not feasible an alternative fall protection method will be implemented.

16.0 WALL OPENINGS

16.1 Each employee working on, at, above, or near wall opening 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, will

be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

17.0 WALKING/WORKING SURFACES NOT OTHERWISE ADDRESSED

17.1 Newkirk Novak realizes there will be situations that are not covered by this written plan, for which we have the duty to provide fall protection. All employees exposed to falls of 6 feet or more to lower levels will be protected by a guardrail system, safety net system, or personal fall arrest system except where specified otherwise in Part 1926.

18.0 PROTECTION FROM FALLING OBJECTS

18.1 When employees are exposed to falling objects, Newkirk Novak ensures they wear hard hats and also implement one of the following measures:

18.2 Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels.

18.3 Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced.

18.4 Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

19.0 ANCHORAGE AND PERSONAL FALL ARREST SYSTEMS

19.1 Personal Fall Arrest Systems are assemblies of components used to arrest a person in a fall from a working height

19.2 Anchor points selected shall have a strength capable of sustaining static loads of at least:

19.2.1 3,600 pounds when certification exists

19.2.2 5,000 pounds in the absence of certification

19.3 When more than one fall arrest system is attached to an anchor point, the anchorage strength shall be multiplied by the number of personal fall arrest systems attached to it.

19.4 Free fall must not exceed six feet

19.5 All lanyards, except positioning lanyards, shall have an integral energy shock absorber

19.6 A personal fall arrest system in which a full body harness is used shall produce a maximum arrest force of not more than 1,800 pounds

19.7 A fall protection system must always include full body harness and connecting means between the harness and an anchorage connector. Such connecting means may consist of a lanyard, energy shock absorber, fall arrest system, lifeline or self-retracting lanyard, or any combination of these.

20.0 ANCHORAGE POINTS

20.1 The proper selection of permanent and or temporary anchorage points (usually part of the structure of industrial facilities) is critical to the integrity of the Fall Arrest Systems.

20.2 For the purposes of identification of certified anchorage points the following definitions apply:

20.2.1 Qualified Person - One with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project or product

20.2.2 Competent Person - A person who is capable of identifying hazardous or dangerous conditions in any personal fall arrest system or any component thereof, as well as in their application and use with related equipment

20.2.3 During emergency (imminent danger) situations, where no permanent or temporary anchorage points have already been approved, and the use of a personal fall arrest system is required to address the situation, and no qualified person is available, the competent person may select a temporary anchorage point for use during the emergency period

21.0 INSPECTION, MAINTENANCE AND STORAGE OF COMPONENTS

21.1 Comply with the manufacturer's instructions. These instructions should be available at all times.

21.2 Equipment shall be inspected by the user before each use. Also, once per year the equipment will be inspected by the competent person other than the user (see the Personal Fall Arrest System Inspection Reference Guide attachment).

21.3 In addition to the inspection set forth by the manufacturer's instruction, the equipment shall be inspected for:

21.3.1 Absence of or unreadable markings

21.3.2 Absence of any elements affecting the equipment form, fit, or function

21.3.3 Evidence of defects in or damage to hardware elements including cracks, sharp edges, deformation, corrosion, chemical damage, excessive heating, alterations, or excessive wear

21.3.4 Evidence of defects in or damage to straps or ropes including fraying, unsplicing, unlaying, kinking, knotting, broken or pulled stitching, excessive elongation, chemical damage, abrasion, excessive aging or wear

21.3.5 Absence of parts, damage or improper function of mechanical devices or connectors

21.4 Maintenance and storage of equipment shall be according to the manufacturer's instructions. If questions arise, the manufacturer shall be contacted and the issue resolved. Retain the manufacturer's instructions for reference.

21.5 Equipment which is inspected and found to be defective, or suspected to be defective shall be tagged an "unusable" and taken to the user's supervisor immediately.

21.6 Scheduled maintenance and disposition of equipment tagged as "unusable" shall be done only by the competent person

21.7 Equipment shall be stored in a manner that will protect it from damage from environmental factors such as heat, light, excessive moisture, oil, chemicals, or other degrading elements

22.0 EMERGENCY RESCUE AND EVACUATION

22.1 Emergency Planning - Work at heights should not be started without planning for emergencies.

22.2 The emergency plan for working at heights shall deal with the following:

22.2.1 Environmental and specific hazards which may affect rescue and evacuation operations

22.2.2 The duties and responsibilities of each member of the work team shall be identified should an emergency arise. At least two members will be in each work team. Designated rescue personnel shall be identified before the work begins. A contact person shall be identified as well as a means to contact him.

22.2.3 A rescue path is the path used to access an incapacitated person and transport them to a safe place shall be identified

22.2.4 An evacuation path is a path used by personnel in the event of an emergency shall be identified

22.2.5 The emergency plan should include backup paths in the event the primary path is blocked

22.2.6 Rescue equipment shall be available at the work site prior to the beginning of the job

23.0 GENERAL WORKSITE POLICY

23.1 If any one of the conditions described in the Workplace Assessment is not met for the area or piece of equipment posing a potential fall hazard, then do not perform that work until the condition is met. If you cannot remedy the condition immediately, notify a Superintendent of the problem and utilize a different piece of equipment or work in a different area, according to the situation.

23.2 If the situation calls for use of fall protection devices such as harnesses and lanyards because the fall hazard cannot be reduced to a safe level, then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work.

23.3 Only employees trained in such work are expected to perform it.

23.3.1 All places of employment, job sites shall be kept clean and orderly and in a sanitary condition.

23.4 All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.

24.0 TRAINING PROGRAM

24.1 Under no circumstances employees will be allowed to work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until they have successfully completed the fall protection training program. The training program includes classroom instruction and operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard the employee may encounter.

24.2 The classroom training is conducted by a qualified representative and the job-site Superintendent will give detailed instructions for the fall protection systems to be used for various activities at each job-site, which will cover the following:

24.2.1 The nature of fall hazards in the work area

24.2.2 Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free fall distance(including

determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspection and storage of the system

24.2.3 The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used

24.2.4 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

24.2.5 The role of each employee in the safety monitoring system when this is used

24.2.6 The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection

24.2.7 The role of employees in fall protection plans

24.2.8 The standards contained in Subpart M of the construction regulations

24.3 The job-site Superintendent will identify all current and new employees who require training and schedule the classroom instruction for those employees. Training on the above components will occur both in the classroom and on the job-site, as appropriate. Classroom training will cover written policies/procedures on fall protection and include a training video on the subject. Job-site instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific job.

24.4 The jobsite superintendent has the overall responsibility for the safety of employees and will verify compliance with (a), training program, for each employee required to be trained. Also, he will determine when an employee who has already been trained, does not have the understanding and skill required by the training program ((a)).

24.4.1 A written certificate of training will be issued which includes:

24.4.1.1 The name of the employee trained

24.4.1.2 The date(s) of training

24.4.1.3 The signature of the competent person who conducted the training or the signature of the employer

24.5 Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed to minimize fall hazards.

25.0 ENFORCEMENT

25.1 Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The job-site Superintendent, as well as individuals in the management reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

26.0 CHANGES TO PLAN

26.1 This plan should be reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented to improve or provide additional fall protection. All changes will be approved by the Job-Site Superintendent or other competent person at the job-site. Workers will be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes will be maintained at the job-site.

Fall Protection Plan Checklist

(Complete for every job-site)

Date: _____

Job-Site Supervisor/Competent Person: _____

Job-site Location: _____

We have chosen the following systems at this Job-site where work on "unprotected sides and edges" exist:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where work on "leading edges" exist:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where "hoist areas" exist:

_____ Guardrails _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where "holes" exist:

_____ Guardrails _____ Covers _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where "precast concrete erection" work exist:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where ramps, runways, & other walkways exist:

_____ Guardrails

_____ Other: _____

We have chosen the following systems for each location where "dangerous equipment" is being used:

_____ Guardrails/Equipment guards _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems at this Job-site where “wall openings” exist:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems where protection from “roofing work” is required:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Warning line system _____ Other:
_____

We have chosen the following systems where “residential construction” work is performed:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems where work around “excavations” exist:

_____ Guardrails _____ Fences _____ Barricades _____ Covers

_____ Other: _____

We have chosen the following systems where work around “formwork and reinforcing steel” exist:

_____ Positioning device _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems where “overhand bricklaying and related work” is performed:

_____ Guardrails _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

We have chosen the following systems for each location where “miscellaneous work” is being done:

_____ Guardrails/Equipment guards _____ Safety nets _____ Personal fall arrest systems

_____ Other: _____

Personal Fall Arrest System Inspection Reference Guide

To maintain their service life and ensure performance capabilities, fall protection systems must be inspected before and after each use. Regular inspection by a competent person for wear, damage or corrosion should be a part of your safety program. Inspect your equipment daily and replace it if any of the defective conditions explained in this guide are found.

Harnesses

Starting at the top of the harness (hold harness by back Dee-ring), grasp one strap and run your hand along the entire length. While running your hand along the strap, bend the webbing over your index fingers. The resulting surface tension makes damaged fibers or cuts easier to see. Follow this procedure for all shoulder straps, back straps, leg straps and the chest strap. Watch for frayed edges, broken fibers, pulled stitches, cuts or chemical damage.

Check Dee-Rings: Check Dee-rings and their metal or plastic wear pads (if any) for distortion, cracks, breaks, and rough or sharp edges. The Dee-ring bar should be at a 90 degree angle with the long axis of the belt and should pivot freely.

Attachments of Buckles: Attachment of buckles and Dee-rings should be given special attention. Note any unusual wear, frayed or cut fibers, or distortion of the buckles or Dee-rings. Rivets should be tight and unmovable with fingers. Body side rivet base and outside rivet burr should be flat against the material. Bent rivets will fail under stress.

Inspect for Frayed or Broken Strands: Broken webbing strands generally appear as tufts in the webbing surface. Any broken, cut or burned stitches will be readily seen. Visually inspect for chemical, heat and corrosive damage.

The Tongue or Billet: The tongue or billet of a belt or strap receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted or broken grommets. Belts and straps should not have additional, punched holes.

Tongue Buckle

Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. The roller should turn freely on frame. Check the roller for distortion or sharp edges.

Friction and Mating Buckles

Inspect the buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar. Look for burrs and cracks.

Lanyards

When inspecting lanyards, begin at one end and work to the opposite end. Slowly rotate the lanyard so that the entire circumference is checked. Spliced ends require particular attention. Hardware (i.e., snaps, Dee-ring and thimbles) should be examined under procedures detailed below:

Hardware

Snaps: Visually inspect the hook and eye for distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper lock is not depressed.

Thimbles: The thimble must be firmly seated in the eye of the splice. The splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

Steel Lanyard

While rotating the steel lanyard watch for cuts, frayed areas, or unusual wearing patterns on the wire. Broken strands will separate from the body of the lanyard. With a gloved hand, slide a piece of cotton swabbing along the length of the lanyard. Cotton tufts will indicate the presence of broken wire strands.

Web Lanyard

While bending the webbing over a pipe or mandrel, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Examine the web for selling, discoloration, cracks, and charring. These are signs of chemical or heat damage. Observe closely for any breaks in the stitching.

Robe Lanyard

Rotation of the rope lanyard while inspecting along its length will cause any fuzzy, worn, broken or cut fibers to appear. Weakened areas from extreme loads will appear as a noticeable change in original diameter. The rope diameter should be uniform throughout.

Shock-absorbing Lanyards

Shock absorbing lanyards should be examined using the method described above for web lanyards. However, also look for the warning flag or signs of deployment. If the flag has been activated, remove the shock-absorbing lanyard from service.

Visual Indications of Damage to Webbing and Lanyards

Type of Webbing	Heat	Chemical	Molten Metal or Flame	Paint and Solvents
Nylon	In excessive heat, nylon becomes brittle and has a shriveled brownish appearance. Fibers will break when flexed. Should not be used above 180 degrees F.	Change in color usually appearing as brownish smear or smudge. Transverse cracks when belt is bent over a mandrel. Loss of elasticity in belt.	Webbing strands fuse together. Hard shiny spots. Hard and brittle to the touch.	Paint which penetrates and dries restricts movement of fibers. Drying agents and solvents in some paints will appear as chemical damage.
Polyester (Dacron)	Same as nylon	Same as nylon	Same as nylon	Same as nylon
DuraFlex	Same as nylon	Same as nylon	Same as nylon	Same as nylon

Note: Lanyards made of nylon or polyester rope will show the same visual indications of damage as nylon webbing.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 105 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Fire Safety

Purpose
The fire safety plan has been developed to work in conjunction with company emergency plans and other safety programs. This includes reviewing all new building construction and renovations to ensure compliance with applicable state, local, and national fire and life safety standards. Fire prevention measures reduce the incidence of fires by eliminating opportunities for ignition of flammable materials.

Scope
This SOP applies to those employees who have been trained on fire extinguisher use, within the past 12 months. Only those trained employees are permitted to fight incipient fires, and then only in the initial stages of the fire.

Responsibilities
All personnel are responsible for adhering to this SOP

Special Definitions

Procedure
1.0 FIRE EXTINGUISHERS

1.1 A portable fire extinguisher is a "first aid" device and is very effective when used while the fire is small. The use of fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers must be installed in jobsites regardless of other firefighting measures. The successful performance of a fire extinguisher in a fire situation largely depends on its proper selection, inspection, maintenance, and distribution.

1.2 It is our policy that no employee fights a structure fire. Our employees are not trained nor are they equipped to fight a structure fire, nor do we desire that they fight a structure fire.

1.3 Only those employees who have been trained on fire extinguisher use, within the past 12 months are permitted to fight incipient fires, and then only in the initial stages of the fire.

2.0 CLASSIFICATION OF FIRES AND SELECTION OF EXTINGUISHERS

2.1 Fires are classified into four general categories depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it.

2.1.1 Class A fires involve materials such as wood, paper, and cloth which produce glowing embers or char.

2.1.2 Class B fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur.

2.1.3 Class C fires involve fires in live electrical equipment or in materials near electrically powered equipment.

2.1.4 Class D fires involve combustible metals, such as magnesium, zirconium, potassium, and sodium.

2.1.5 Extinguishers will be selected according to the potential fire hazard, the construction and occupancy of facilities, hazard to be protected, and other factors pertinent to the situation.

3.0 LOCATION AND MARKING OF EXTINGUISHERS

3.1 Extinguishers will be conspicuously located and readily accessible for immediate use in the event of fire. They will be located along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets will be used as extinguisher locations whenever possible.

3.2 Extinguishers will be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers and the arrows will be marked with the extinguisher classification.

3.3 If extinguishers intended for different classes of fire are located together, they will be conspicuously marked to ensure that the proper class extinguisher selection is made at the time of a fire. Extinguisher classification markings will be located on the front of the shell above or below the extinguisher nameplate. Markings will be of a size and form to be legible from a distance of 3 feet.

4.0 CONDITION

4.1 Portable extinguishers will be maintained in a fully charged and operable condition. They will be kept in their designated locations at all times when not being used. When extinguishers are removed for maintenance or testing, a fully charged and operable replacement unit will be provided.

5.0 MOUNTING AND DISTRIBUTION OF EXTINGUISHERS

5.1 Extinguishers will be installed on hangers, brackets, in cabinets, or on shelves. Extinguishers having a gross weight not exceeding 40 pounds will be so installed that the top of the extinguisher is not more than 3-1/2 feet above the floor.

5.2 Extinguishers mounted in cabinets or wall recesses or set on shelves will be placed so that the extinguisher operating instructions face outward. The location of such extinguishers will be made conspicuous by marking the cabinet or wall recess in a contrasting color, which will distinguish it from the normal decor.

5.3 Extinguishers must be distributed in such a way that the amount of time needed to travel to their location and back to the fire does not allow the fire to get out of control. OSHA requires that one extinguisher shall be provided for every 3000 square

feet of jobsite space; and at least one on every floor; and one within 25 feet of dispensing flammable liquids.

6.0 INSPECTION AND MAINTENANCE

6.1 Once an extinguisher is selected, purchased, and installed, it is the responsibility of the Superintendent to oversee the inspection, maintenance, and testing of fire extinguishers to ensure that they are in proper working condition and have not been tampered with or physically damaged. Fire extinguishers need to be inspected monthly and inspection date documented.

7.0 EMERGENCY EXIT

7.1 Every exit will be clearly visible, or the route to it conspicuously identified in such a manner that every occupant of the building will readily know the direction of escape from any point. At no time will exits be blocked.

7.2 Any doorway or passageway which is not an exit or access to an exit but which may be mistaken for an exit will be identified by a sign reading "Not An Exit" or a sign indicating it actual use. Exits and accesses to exits will be marked by a readily visible sign. Each exit sign (other than internally illuminated signs) will be illuminated by a reliable light source providing not less than 5 foot-candles on the illuminated surface.

TO: ALL PERSONNEL

SUBJECT: **Fire Fighting**

It is the policy of Newkirk Novak that no employee fights a structure fire. Our employees are not trained nor are they equipped to fight a structure fire, nor do we desire that they fight a structure fire.

Only those employees who have been trained on fire extinguisher use, within the past 12 months, by Summit Safety Group, are permitted to fight incipient fires, and then only in the initial stages of the fire.

Fire Hazard Program

ON SITE FIRE HAZARD(S)

This is a complete list of potential fire hazard for

_____

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 104 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
First Aid Policy

Purpose
Guidelines for employees to follow when administrating first aid

Scope
All personnel

Responsibilities
All personnel

Special Definitions

Procedure
1.0 TREATMENT OF FIRST AID INJURIES

1.1 The company provides an adequately stocked first aid kit, and will continue to do so, so that an employee may treat a minor injury to his/her own person. No person or employee is under any obligation to render first aid to another employee as part of his/her occupational obligations. If you choose to do so, you are acting as a Good Samaritan and are to be applauded.

1.2 Injured employees may be transported to a medical facility from the jobsite by the onsite supervisor privately owned vehicle in the event EMS services are not within a reasonable response distance, but the owner of the vehicle does so at his/her own discretion. The person who chooses to assist the injured person is under no contractual obligation to the Company to perform such an act. The person who chooses to assist the injured person does so as a Good Samaritan and not as an employee of Newkirk Novak. If needed, an ambulance will be summoned to perform this service.

1.3 If there is any further clarification needed on this subject, employees should contact the Operations Manager/Superintendent.

1.4 All onsite superviros are trained in first aid and ANSI approved first aid kits are at each project. Direction to medical facilities are posted at each project.

FIRST AID POLICY

SUBJECT: TREATMENT OF FIRST AID INJURIES

TO: All Employees

We have made an adequately stocked first aid kit available, and will continue to do so, so that an employee may treat a minor injury to his/her own person. No person or employee of Newkirk Novak is under any obligation to render first aid to another employee as part of his/her occupational obligations. If you choose to do so, you are acting as a Good Samaritan and are to be applauded.

Injured employees may be transported to a medical facility from the business in a privately owned vehicle, but the owner of the vehicle does so at his/her own discretion. The person who chooses to assist the injured person is under no contractual obligation to Newkirk Novak to perform such an act. The person who chooses to assist the injured person does so as a Good Samaritan and not as an employee of Newkirk Novak. If needed, an ambulance will be summoned to perform this service.

If there is any further clarification needed on this subject, please contact the Operations Manager/Superintendent.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 138 **Next Scheduled Review: 5/2024**
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Title
Hand and Power Tool Safety

Purpose
This written program outlines the minimum requirements for the safe use of handheld tools. This included manual, pneumatic, power, and electrically operated tools.

Scope
This document applies to all employees using handheld power tools

Responsibilities
See Procedure section for Responsibilities

Special Definitions

Procedure
1.0 GENERAL REQUIREMENTS

1.1 All use, storage and handling of hand and portable power tools will be consistent with the requirements outlined in 29 CFR §1910.241-244. All employees engaged in the use of hand or portable power tools should be familiar with the requirements as outlined in that section.

1.2 All manufacturer safety practices must be employed while using tools. This means all employees must read, know and understand all safeguards prior to using equipment. If an individual does not understand the safe operation of a piece of equipment, he/she should notify their Supervisor to obtain clarification. All required personal protective equipment must be worn at all times when using equipment.

2.0 HAND TOOLS AND EQUIPMENT

2.1 All hand tools such as chisels, punches, etc. which develop “mushroomed” head must be taken out of service and reconditioned.

2.2 Handles on hammers, axes and similar equipment that are cracked or fractured should be replaced prior to use. Care should be taken to assure the head is properly and securely attached.

2.3 Wrenches whose handles are bent or whose gripping surfaces are worn should be replaced.

2.4 Screwdrivers that are bent or whose ends are chipped should be replaced.

2.5 Tools should be stored in a secure, dry location where they won’t be tampered with.

2.6 Tools should be stored in such a way that sharp edges do not present a danger when reaching into tool cribs and storage areas.

2.7 Tool cutting edges should be sharp so the tool will move smoothly and not bind.

2.8 All handles should be free of burs and splinters and should be firmly attached to the working head of the tool.

3.0 PORTABLE POWER TOOLS AND EQUIPMENT

3.1 All grinders, saws and similar equipment must be fitted with appropriate machine guarding as specified by the manufacturer.

3.2 The adjustable tongue on the top side of the grinder must be properly guarded to prevent physical contact by the operator.

3.3 All corded electrically operated tools and equipment must be effectively grounded by either a grounding prong or an approved double-insulated case. Inspect all prongs to ensure they are not bent or otherwise damaged and all cases to ensure they are not cracked or damaged.

3.4 All electric cords must be in good condition; free of frays or other physical defects.

3.5 Pneumatic hoses must be free of damage or deterioration.

4.0 ABRASIVE WHEEL EQUIPMENT

4.1 The work rest shall be within 1/8 inch of the wheel.

4.2 The adjustable tongue on the top side of a bench grinder must be within ¼ inch of the wheel.

4.3 The bench grinder shall be mounted in such a way that it is secure and will not shift or tip.

4.4 On-off control switches must be clearly marked in red and readily accessible to the operator for easy deactivation of equipment in case of emergency.

4.5 The maximum RPM rating of the grinder must be known and the maximum rating of the wheel does not exceed the grinder rating.

4.6 Grinding wheels must not be cracked or otherwise damaged.

4.7 Grinders that use a coolant must be equipped with splash guards to prevent coolant from coming into contact with the operator.

4.8 Handheld grinders, when using hard grinding wheels, must be equipped with a guard. Handheld grinders equipped with a flexible disc do not have to be guarded.

5.0 POWDER ACTUATED TOOLS

5.1 Powder-actuated tools are stored in their own locked container when not being used.

5.2 All powder-actuated tools will be left unloaded until they are actually used.

5.3 Only trained and authorized employees will use powder-actuated tools.

6.0 MACHINE GUARDING

6.1 Machine guards will be clean, secure and so arranged so they do not offer a hazard in their use.

6.2 All moving chains, gears, pulleys, etc. will be properly guarded.

6.3 All emergency STOP buttons will be colored red and easily accessible to the operator in an emergency.

6.4 All non-current-carrying metal parts of electric equipment will be properly grounded.

6.5 Sufficient clearance must be maintained around equipment to ensure safe operation, maintenance, and waste removal.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

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Title
Hazard Communication

Purpose
To ensure that the hazards of all chemicals are evaluated, and that information is transmitted to affected employers and employees.

This Hazard Communication Program will be used to make employees more aware of the safety and health hazards associated with chemical substances in our facilities.

Scope
This Hazard Communication Program applies to all employees that work around hazardous materials. This written program will be accessible for review by all employees and will be electronically accessible.

Responsibilities
See procedure section for responsibilities

Special Definitions
SDS - Safety Data Sheet

OSHA - Occupational Safety and Health Administration

Procedure
1.0 HAZARD DETERMINATION

1.1 The Safety Director/Superintendent will use safety data sheets from manufacturers, distributors, and importers, to establish hazard determination requirements.

2.0 LABELING

2.1 The Superintendent/Subcontractor Foreman will be responsible for:

2.1.1 Proper labeling of all containers received

2.1.2 Checking all labels for identity, hazard warnings, name and address of responsible supplier

2.1.3 Making certain that all portable containers used at the (jobsite/facility) are labeled with identity and hazard warnings (NFPA, HIMS, or GHS)

3.0 SAFETY DATA SHEET (SDS)

3.1 The Administrative Assistant will perform the following at the headquarters:

3.1.1 Compile a master SDS file available electronically on Sharefile.

3.1.2 Make SDS's available for review to all employees

3.1.3 Copies will be furnished to employees upon request

3.1.4 Make requests for SDS's on all purchases
3.1.5 Maintain a file of all follow-up letters and telephone calls regarding all shipments received without SDS's
3.1.6 Provide employees with the required "Right to Know" hazard communication and posting informing employees of new and revised SDS's within 5 days of receipt.

4.0 EMPLOYEE INFORMATION AND TRAINING

4.1 The Superintendent Manager will coordinate and maintain records of training covering 1910.1200 "Right to Know" hazard communication rules conducted at the site.
4.2 Specifically this material containing information on the following:
4.2.1 Requirements of the standard
4.2.2 Where hazardous chemicals are present
4.2.3 Where SDS and the written program are located
4.2.4 How to detect the presence or release of a hazardous chemical
4.2.5 Physical and health hazards of the chemical
4.2.6 How to protect yourself from chemical hazards
4.2.7 Details of the written program
4.2.8 Hazardous chemicals and their dangers in the employees' work place
4.2.9 Policies to know and procedures to follow if the employee becomes exposed to these hazardous chemicals
4.2.10 How to read and interpret labels and SDS' utilized in their work place
4.2.11 Use of proper protective equipment
4.2.12 Steps the company has taken to lessen or prevent exposure to hazardous chemicals by employees
4.2.13 Repeat the above when a new chemical is introduced within the employees' work place
4.2.14 Have each employee attending the training session sign the "Hazard Communication - Training Roster" indicating they received the safety training
4.2.15 Safety meetings will be conducted as required to discuss hazardous materials used in employees' work place. Attendance is mandatory for all employees
4.2.16 Employee's bulletin boards will have posting that will provide location of the written hazard communication program.

5.0 HAZARDS OF NON-ROUTINE TASKS

5.1 Information will include:
5.1.1 Action necessary to lessen the hazards
5.1.2 Safety measures the employee should take

6.0 ON-SITE CONTRACTORS

6.1 The Superintendent will inform other contractors of the hazards their employees may be exposed to while performing their work.
6.2 Make available SDS's for all pertinent hazardous chemicals their employees may be exposed to.
6.3 Proper procedures to follow if their employees are exposed.
6.4 Will coordinate with the prime contractor to insure that contractor's employees are given this information.

6.5 The labeling system used by the product manufacturer will be the system utilized by Newkirk Novak.

7.0 HAZARDOUS CHEMICAL INVENTORY LIST

7.1 In the front of the SDS book is a list of chemicals used at the site.

7.2 These SDS's will be available to all inspectors and personnel. He or she will use this list to evaluate the SDS program.

SAFETY DATA SHEET FILE LOCATION

The file of SDS's for Newkirk Novak is located electronically on Sharefile and is available for your review at any time you desire. Copies of SDS's will be furnished if you so request.

Copies of the following programs are also available in the same file for your review:

Hazard Communication Program, Lockout/Tagout Program, Emergency Action Program

INJURY & HEALTH RECORDS

All health and injury records maintained by this company are located in the Human Resources office.

All records maintained by this company are available to doctors or concerned employees by written request to Human Resources.

********* THIS LETTER IS TO REMAIN PERMANENTLY POSTED *********

(a) "Purpose." The purpose of this section is to provide employees and their designated representatives a right of access to relevant exposure and medical records; and to provide representatives of the Assistant Secretary a right of access to these records in order to fulfill responsibilities under the Occupational Safety and Health Act. Access by employees, their representatives, and the Assistant Secretary is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease. Each employer is responsible for assuring compliance with this section, but the activities involved in complying with the access to medical records provisions can be carried out, on behalf of the employer, by the physician or other health care personnel in charge of employee medical records. Except as expressly provided, nothing in this section 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.
(b) "Scope and application."
(b)(1) This section applies to each general industry, maritime, and construction employer who makes, maintains, contracts for, or has access to employee exposure or medical records, or analyses thereof, pertaining to employees exposed to toxic substances or harmful physical agents.
(b)(2) This section applies to all employee exposure and medical records, and analyses thereof, of such employees, whether or not the records are mandated by specific occupational safety and health standards.
(b)(3) This section applies to all employee exposure and medical records, and analyses thereof, made or maintained in any manner, including on an in-house or contractual (e.g., fee-for-service) basis. Each employer shall assure that the preservation and access requirements of this section are complied with regardless of the manner in which records are made or maintained.
(c) "Definitions."
(c)(1) "Access" means the right and opportunity to examine and copy.
(c)(2) "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.

(c)(3) "Designated representative" means any individual or organization to whom an employee gives written authorization to exercise a right of access. For the purposes of access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.
(c)(4) "Employee" means a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representative may directly exercise all the employee's rights under this section.
(c)(5) "Employee exposure record" means a record containing any of the following kinds of information:
(c)(5)(i) Environmental (workplace) 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;
(c)(5)(ii) 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)(5)(iii) Material safety data sheets indicating that the material may pose a hazard to human health; or
(c)(5)(iv) 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.
(c)(6)
(c)(6)(i) "Employee 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, including:
(c)(6)(i)(A) Medical and employment questionnaires or histories (including job description and occupational exposures),
(c)(6)(i)(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)(6)(i)(C) Medical opinions, diagnoses, progress notes, and recommendations,
(c)(6)(i)(D) First aid records,
(c)(6)(i)(E) Descriptions of treatments and prescriptions, and
(c)(6)(i)(F) Employee medical complaints.
(c)(6)(ii) "Employee medical record" does not include medical information in the form of:
(c)(6)(ii)(A) Physical specimens (e.g., blood or urine samples) which are routinely discarded as a part of normal medical practice, or
(c)(6)(ii)(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.), or
(c)(6)(ii)(C) Records created solely in preparation for litigation which are privileged from discovery under the applicable rules of procedure or evidence; or
(c)(6)(ii)(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.
(c)(7) "Employer" means a current employer, a former employer, or a successor employer.
(c)(8) "Exposure" or "exposed" means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.
(c)(9) " Health Professional" means a physician, occupational health nurse, industrial hygienist, toxicologist, or epidemiologist, providing medical or other occupational health services to exposed employees.
(c)(10) "Record" means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).
(c)(11) "Specific chemical identity" means a chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

(c)(12)(i) "Specific written consent" means a written authorization containing the following:
(c)(12)(i)(A) The name and signature of the employee authorizing the release of medical information,
(c)(12)(i)(B) The date of the written authorization,
(c)(12)(i)(C) The name of the individual or organization that is authorized to release the medical information,
(c)(12)(i)(D) The name of the designated representative (individual or organization) that is authorized to receive the released information,
(c)(12)(i)(E) A general description of the medical information that is authorized to be released,
(c)(12)(i)(F) A general description of the purpose for the release of the medical information, and
(c)(12)(i)(G) A date or condition upon which the written authorization will expire (if less than one year).
(c)(12)(ii) A written authorization does not operate to authorize the release of medical information not in existence on the date of written authorization, unless the release of future information is expressly authorized, and does not operate for more than one year from the date of written authorization.
(c)(12)(iii) A written authorization may be revoked in writing prospectively at any time.
(c)(13) "Toxic substance or harmful physical agent" means any chemical substance, biological agent (bacteria, virus, fungus, etc.), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and non-ionizing radiation, hypo - or hyperbaric pressure, etc.) which:
(c)(13)(i) Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS) which is incorporated by reference as specified in Sec. 1910.6; or
(c)(13)(ii) Has yielded positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the employer; or
(c)(13)(iii) Is the subject of a material safety data sheet kept by or known to the employer indicating that the material may pose a hazard to human health.
(c)(14) "Trade secret" means any confidential formula, pattern, process, device, or information or compilation of information that is used in an employer's business and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.
(d) "Preservation of records."
(d)(1) Unless a specific occupational safety and health standard provides a different period of time, each employer shall assure the preservation and retention of records as follows:
(d)(1)(i) "Employee medical records." The medical record for each employee shall be preserved and maintained for at least the duration of employment plus thirty (30) years, except that the following types of records need not be retained for any specified period:
(d)(1)(i)(A) Health insurance claims records maintained separately from the employer's medical program and its records,
(d)(1)(i)(B) First aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a non-physician and if maintained separately from the employer's medical program and its records, and
(d)(1)(i)(C) The medical records of employees who have worked for less than (1) year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.
(d)(1)(ii) "Employee exposure records." Each employee exposure record shall be preserved and maintained for at least thirty (30) years, except that:
(d)(1)(ii)(A) Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one (1) year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty (30) years; and
(d)(1)(ii)(B) Material safety data sheets and paragraph (c)(5)(iv) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years(1); and

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Footnote(1) Material safety data sheets must be kept for those chemicals currently in use that are effected by the Hazard Communication Standard in accordance with 29 CFR 1910.1200(g).

(d)(1)(ii)(C)
Biological monitoring results designated as exposure records by specific occupational safety and health standards shall be preserved and maintained as required by the specific standard.
(d)(1)(iii) "Analyses using exposure or medical records." Each analysis using exposure or medical records shall be preserved and maintained for at least thirty (30) years.
(d)(2) Nothing in this section is intended to mandate the form, manner, or process by which an employer preserves a record so long as the information contained in the record is preserved and retrievable, except that chest X-ray films shall be preserved in their original state.
(e) "Access to records" -
(e)(1) "General."
(e)(1)(i) Whenever an employee or designated representative requests access to a record, the employer shall assure that access is provided in a reasonable time, place, and manner. If the employer cannot reasonably provide access to the record within fifteen (15) working days, the employer shall within the fifteen (15) working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.
(e)(1)(ii) The employer may require of the requester only such information as should be readily known to the requester and which may be necessary to locate or identify the records being requested (e.g. dates and locations where the employee worked during the time period in question).
(e)(1)(iii) Whenever an employee or designated representative requests a copy of a record, the employer shall assure that either:
(e)(1)(iii)(A) A copy of the record is provided without cost to the employee or representative,
(e)(1)(iii)(B) The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record, or
(e)(1)(iii)(C) The record is loaned to the employee or representative for a reasonable time to enable a copy to be made.
(e)(1)(iv) In the case of an original X-ray, the employer may restrict access to on-site examination or make other suitable arrangements for the temporary loan of the X-ray.
(e)(1)(v) Whenever a record has been previously provided without cost to an employee or designated representative, the employer may charge reasonable, non-discriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for

a request by the employee or designated representative for additional copies of the record, except that
(e)(1)(v)(A) An employer shall not charge for an initial request for a copy of new information that has been added to a record which was previously provided; and
(e)(1)(v)(B) An employer shall not charge for an initial request by a recognized or certified collective bargaining agent for a copy of an employee exposure record or an analysis using exposure or medical records.
(e)(1)(vi) Nothing in this section is intended to preclude employees and collective bargaining agents from collectively bargaining to obtain access to information in addition to that available under this section.
(e)(2) "Employee and designated representative access" -
(e)(2)(i) "Employee exposure records."
(e)(2)(i)(A) Except as limited by paragraph (f) of this section, each employer shall, upon request, assure the access to each employee and designated representative to employee exposure records relevant to the employee. For the purpose of this section, an exposure record relevant to the employee consists of:
(e)(2)(i)(A)(1) A record which measures or monitors the amount of a toxic substance or harmful physical agent to which the employee is or has been exposed;
(e)(2)(i)(A)(2) In the absence of such directly relevant records, such records of other employees with past or present job duties or working conditions related to or similar to those of the employee to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents to which the employee is or has been subjected, and
(e)(2)(i)(A)(3) Exposure records to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents at workplaces or under working conditions to which the employee is being assigned or transferred.
(e)(2)(i)(B) Requests by designated representatives for unconsented access to employee exposure records shall be in writing and shall specify with reasonable particularity:
(e)(2)(i)(B)(1) The record requested to be disclosed; and
(e)(2)(i)(B)(2) The occupational health need for gaining access to these records.
(e)(2)(ii) "Employee medical records."
(e)(2)(ii)(A) Each employer shall, upon request, assure the access of each employee to employee medical records of which the employee is the subject, except as provided in paragraph (e)(2)(ii)(D) of this section.
(e)(2)(ii)(B) Each employer shall, upon request, assure the access of each designated representative to the employee medical records of any employee who has given the designated representative specific written consent. Appendix A to this section contains a sample form which may be used to establish specific written consent for access to employee medical records.
(e)(2)(ii)(C) Whenever access to employee medical records is requested, a physician representing the employer may recommend that the employee or designated representative:
(e)(2)(ii)(C)(1) Consult with the physician for the purposes of reviewing and discussing the records requested,
(e)(2)(ii)(C)(2) Accept a summary of material facts and opinions in lieu of the records requested, or
(e)(2)(ii)(C)(3) Accept release of the requested records only to a physician or other designated representative.
(e)(2)(ii)(D) Whenever an employee requests access to his or her employee medical records, and a physician representing the employer believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the employer may inform the employee that access will only be provided to a designated representative of the employee having specific written consent, and deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the employer shall assure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.
(e)(2)(ii)(E) A physician, nurse, or other responsible health care personnel maintaining employee medical records may delete from requested medical records the identity of a family member, personal friend, or fellow employee who has provided confidential information concerning an employee's health status.
(e)(2)(iii) Analyses using exposure or medical records.
(e)(2)(iii)(A) Each employer shall, upon request, assure the access of each employee and designated representative to each analysis using exposure or medical records concerning the employee's working conditions or workplace.
(e)(2)(iii)(B) Whenever access is requested to an analysis which reports the contents of employee medical records by either direct identifier (name, address, social security number, payroll number, etc.) or by information which could reasonably be used under the circumstances indirectly to identify specific employees (exact age, height, weight, race, sex, date of initial employment, job title, etc.), the employer shall assure that personal identifiers are removed before access is provided. If the employer can demonstrate that removal of personal identifiers from an analysis is not feasible, access to the personally identifiable portions of the analysis need not be provided.
(e)(3) "OSHA access."
(e)(3)(i) Each employer shall, upon request, and without derogation of any rights under the Constitution or the Occupational Safety and Health Act of 1970, 29 U.S.C. 651 "et seq.," that the employer chooses to exercise, assure the prompt access of representatives of the Assistant Secretary of Labor for Occupational Safety and Health to employee exposure and medical records and to analyses using exposure or medical records. Rules of agency practice and procedure governing OSHA access to employee medical records are contained in 29 CFR 1913.10.
(e)(3)(ii) Whenever OSHA seeks access to personally identifiable employee medical information by presenting to the employer a written access order pursuant to 29 CFR 1913.10(d), the employer shall prominently post a copy of the written access order and its accompanying cover letter for at least fifteen (15) working days.
"Trade secrets."
(f)(1) Except as provided in paragraph (f)(2) of this section, nothing in this section precludes an employer from deleting from records requested by a health professional, employee, or designated representative any trade secret data which discloses manufacturing processes, or discloses the percentage of a chemical substance in mixture, as long as the health professional, employee, or designated representative is notified that information has been deleted. Whenever deletion of trade secret information substantially impairs evaluation of the place where or the time when exposure to a toxic substance or harmful physical agent occurred, the employer shall provide alternative information which is sufficient to permit the requesting party to identify where and when exposure occurred.
(f)(2) The employer may withhold the specific chemical identity, including the chemical name and other specific identification of a toxic substance from a disclosable record provided that:
(f)(2)(i) The claim that the information withheld is a trade secret can be supported;
(f)(2)(ii) All other available information on the properties and effects of the toxic substance is disclosed;
(f)(2)(iii) The employer informs the requesting party that the specific chemical identity is being withheld as a trade secret; and
(f)(2)(iv) The specific chemical identity is made available to health professionals, employees and designated representatives in accordance with the specific applicable provisions of this paragraph.
(f)(3) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a toxic

substance is necessary for emergency or first-aid treatment, the employer shall immediately disclose the specific chemical identity of a trade secret chemical to the treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of paragraphs (f)(4) and (f)(5), as soon as circumstances permit.
(f)(4) In non-emergency situations, an employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph (f)(2) of this section, to a health professional, employee, or designated representative if:
(f)(4)(i) The request is in writing;
(f)(4)(ii) The request describes with reasonable detail one or more of the following occupational health needs for the information:
(f)(4)(ii)(A) To assess the hazards of the chemicals to which employees will be exposed;
(f)(4)(ii)(B) To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;
(f)(4)(ii)(C) To conduct pre-assignment or periodic medical surveillance of exposed employees;
(f)(4)(ii)(D) To provide medical treatment to exposed employees;
(f)(4)(ii)(E) To select or assess appropriate personal protective equipment for exposed employees;
(f)(4)(ii)(F) To design or assess engineering controls or other protective measures for exposed employees; and
(f)(4)(ii)(G) To conduct studies to determine the health effects of exposure.
(f)(4)(iii) The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information would not enable the health professional, employee or designated representative to provide the occupational health services described in paragraph (f)(4)(ii) of this section;
(f)(4)(iii)(A) The properties and effects of the chemical;
(f)(4)(iii)(B) Measures for controlling workers' exposure to the chemical;
(f)(4)(iii)(C) Methods of monitoring and analyzing worker exposure to the chemical; and
(f)(4)(iii)(D) Methods of diagnosing and treating harmful exposures to the chemical;
(f)(4)(iv) The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and
(f)(4)(v) The health professional, employee, or designated representative and the employer or contractor of the services of the health professional or designated representative agree in a written confidentiality agreement that the health professional, employee or designated representative will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to OSHA, as provided in paragraph (f)(9) of this section, except as authorized by the terms of the agreement or by the employer.
(f)(5) The confidentiality agreement authorized by paragraph (f)(4)(iv) of this section:
(f)(5)(i) May restrict the use of the information to the health purposes indicated in the written statement of need;
(f)(5)(ii) May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and,
(f)(5)(iii) May not include requirements for the posting of a penalty bond.
(f)(6) Nothing in this section is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.
(f)(7) If the health professional, employee or designated representative receiving the trade secret information decides that there is a need to disclose it to OSHA, the employer who provided the information shall be informed by the health professional prior to, or at the same time as, such disclosure.
(f)(8) If the employer denies a written request for disclosure of a specific chemical identity, the denial must:
(f)(8)(i) Be provided to the health professional, employee or designated representative within thirty days of the request;
(f)(8)(ii) Be in writing;
(f)(8)(iii) Include evidence to support the claim that the specific chemical identity is a trade secret;
(f)(8)(iv) State the specific reasons why the request is being denied; and,
(f)(8)(v) Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.
(f)(9) The health professional, employee, or designated representative whose request for information is denied under paragraph (f)(4) of this section may refer the request and the written denial of the request to OSHA for consideration.
(f)(10) When a health professional, employee, or designated representative refers a denial to OSHA under paragraph (f)(9) of this section, OSHA shall consider the evidence to determine if:
(f)(10)(i) The employer has supported the claim that the specific chemical identity is a trade secret;
(f)(10)(ii) The health professional employee, or designated representative has supported the claim that there is a medical or occupational health need for the information; and
(f)(10)(iii) The health professional, employee or designated representative has demonstrated adequate means to protect the confidentiality.
(f)(11)(i) If OSHA determines that the specific chemical identity requested under paragraph (f)(4) of this section is not a "bona fide" trade secret, or that it is a trade secret but the requesting health professional, employee or designated representatives has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means for complying with the terms of such agreement, the employer will be subject to citation by OSHA.
(f)(11)(ii) If an employer demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health needs are met without an undue risk of harm to the employer.
(f)(12) Notwithstanding the existence of a trade secret claim, an employer shall, upon request, disclose to the Assistant Secretary any information which this section requires the employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Assistant Secretary so that suitable determinations of trade secret status can be made and the necessary protections can be implemented.
(f)(13) Nothing in this paragraph shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is a trade secret.
(g) "Employee information."
(g)(1) Upon an employee's first entering into employment, and at least annually thereafter, each employer shall inform current employees covered by this section of the following:
(g)(1)(i) The existence, location, and availability of any records covered by this section;
(g)(1)(ii) The person responsible for maintaining and providing access to records; and
(g)(1)(iii) Each employee's rights of access to these records.
(g)(2) Each employer shall keep a copy of this section and its appendices, and make copies readily available, upon request, to employees. The employer shall also distribute to current employees any informational materials concerning this section which are made available to the employer by the Assistant Secretary of Labor for Occupational Safety and Health.

(h) "Transfer of records."
(h)(1) Whenever an employer is ceasing to do business, the employer shall transfer all records subject to this section to the successor employer. The successor employer shall receive and maintain these records.
(h)(2) Whenever an employer is ceasing to do business and there is no successor employer to receive and maintain the records subject to this standard, the employer shall notify affected current employees of their rights of access to records at least three (3) months prior to the cessation of the employer's business.
(h)(3) Whenever an employer either is ceasing to do business and there is no successor employer to receive and maintain the records, or intends to dispose of any records required to be preserved for at least thirty (30) years, the employer shall:
(h)(3)(i) Transfer the records to the Director of the National Institute for Occupational Safety and Health (NIOSH) if so required by a specific occupational safety and health standard; or
(h)(3)(ii) Notify the Director of NIOSH in writing of the impending disposal of records at least three (3) months prior to the disposal of the records.
(h)(4) Where an employer regularly disposes of records required to be preserved for at least thirty (30) years, the employer may, with at least (3) months notice, notify the Director of NIOSH on an annual basis of the records intended to be disposed of in the coming year.
(i) "Appendices." The information contained in appendices A and B to this section is not intended, by itself, to create any additional obligations not otherwise imposed by this section nor detract from any existing obligation.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 167 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Hazard Identification and Risk Assessment

Purpose
This program has provided processes to ensure employees and/or sub-contractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned (this review shall be documented). It provides mechanisms to involve workers and their elected representatives in the development of the worker safety and health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.

Scope
This document applies to all employees

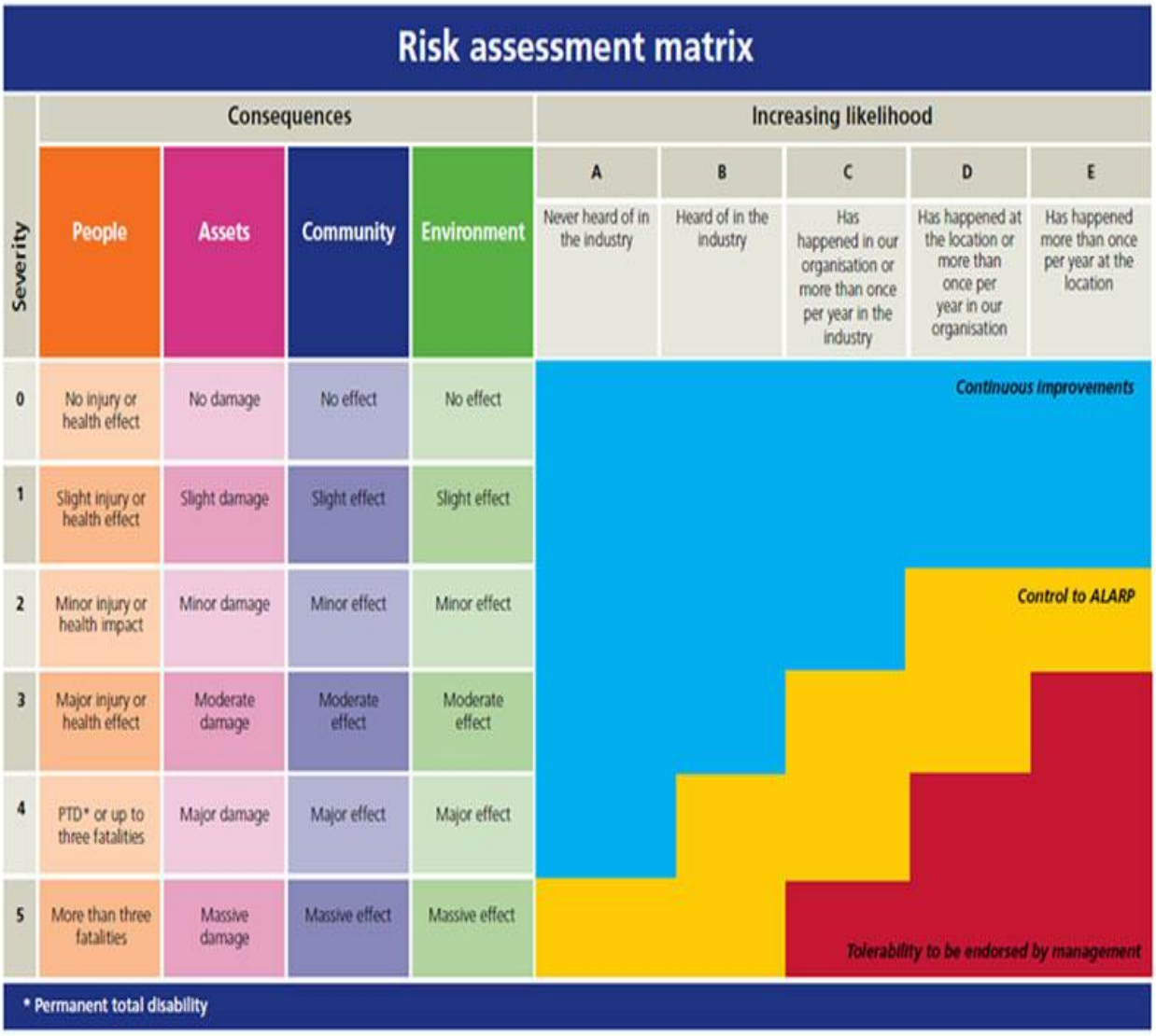
Responsibilities
Newkirk and Novak have established procedures to identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. The program must identify processes are in place to identify potential hazards by the use of JSA's/JHA's facility wide and area specific analysis/inspections.

Special Definitions

Procedure
1.0 The following processes are used to ensure employees and/or subcontractors are actively involved in hazard identification processes:
- **1.1** Identification and control of hazards in the workplace/worksite will be accomplished by the use of Job Safety Analysis/Job Hazard Analysis format.
- **1.2** All goals set will ensure the safety and health of employees and will be site specific.
- **1.3** The hazard identification process should be used for routine and non-routine work activities.
- **1.4** The hazard identification will also be used for new processes, changes in operation, products or service as applicable.
- **1.5** This program must identify hazards, classify/prioritize, and address based on risk associated the task by use of a Risk Analysis Matrix outlining severity and probability.
- **1.6** The onsite supervisor must use this matrix along with JSA’s/JHA’s to determine the hazards associated with the task to be performed.
- **1.7** All hazards found utilizing the above system must be addressed and mitigated. This will be accomplished by dedicating assignments, appropriate documentation of completion and implemented controls.

1.8 All employees will be trained in the JSA/JHA systems for hazard recognition.
1.9 All employees will be trained on the use of PPE and the use of any/all types of equipment to mitigate or reduce risk.

Step 1: Identify Hazards



In order to start, you want to go for as many risks as you can.

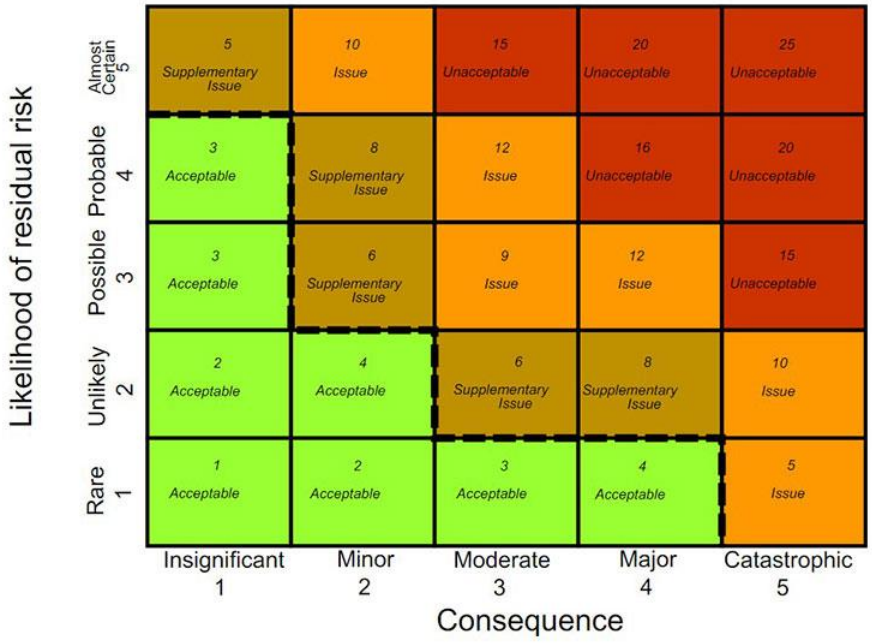
Connected with your scope, the list needs to belong and detailed. It can include anything from theft, to burns, and even pollution. It is really important that you think at all potential risks for any new project you are working on.

Step 2: Risk Analysis

Hazard analysis and risk assessment matrix with proposed actions					
	HAZARD SEVERITY				
HAZARD LIKELIHOOD	**Critical Illness or Injury**	**Severe Illness or Injury**	**Moderate Illness or Injury**	**Minor Impact**	**Negligible Impact**
Very Likely	Requires Control	Requires Control	Requires Control	Manageable	Manageable
Likely	Requires Control	Requires Control	Manageable	Manageable and Tolerable	Tolerable
Possible	Requires Control	Manageable	Manageable and Tolerable	Tolerable	Acceptable
Unlikely	Manageable	Tolerable	Tolerable	Acceptable	Acceptable
Highly Unlikely	Tolerable	Acceptable	Acceptable	Acceptable	Acceptable

A risk assessment matrix focuses a lot of chances and consequences as the main focus.

Step 3: Determining Risk Impact



Step 4: Prioritize the risks

Likelihood: the probability of a risk

		Probability			
		1 = high (80% ≤ x ≤ 100%)	2 = medium high (60% ≤ x < 80%)	3 = medium low (30% ≤ x < 60%)	4 = low (0% < x < 30%)
Impact	A=high (Rating 100)	(Exposure – Very High) (Score 100)	(Exposure – Very High) (Score 80)	(Exposure – High) (Score 60)	(Exposure – Moderate) (Score 30)
	B=medium (Rating 50)	(Exposure – High) (Score 50)	(Exposure – Moderate) (Score 40)	(Exposure – Moderate) (Score 30)	(Exposure – Low) (Score 15)
	C=low (Rating 10)	(Exposure – Low) (Score 10)	(Exposure – Low) (Score 8)	(Exposure – Low) (Score 6)	(Exposure – Low) (Score 3)

Depending on the likelihood of the occurrence of the risk, the risk can be classified under these categories:

– A risk that is almost guaranteed to show up during the execution of the project. Any risk that is more than 85% likely to cause problems is going to fall under this category.

– Risks that have a 60%-80% chance to occur can be grouped as likely.

– Risks that have a 50/50 probability of occurrence are named occasional.

– Seldom are the risks that have a low probability of occurrence.

– Unlikely are the risks that have almost no probability of occurring.

Consequences: the severity of the impact or the extent of damage caused by the risk

LIKELIHOOD (probability) **How likely is the event to occur at some time in the** *(Linear Scale time specific matrix)*	**CONSEQUENCES** **What is the Severity of injuries /potential damages / financial impacts (if the risk event actually occurs)?** *(Logarithmic Scale, property industry specific matrix)*				
	Insignificant	Minor	Moderate	Major	Catastrophic
	No Injuries First Aid No Envir Damage << $1,000 Damage	Some First Aid required Low Envir Damage << $10,000 Damage	External Medical Medium Envir Damage <<$100,000 Damage	Extensive injuries High Envir Damage <<$1,000,000 Damage	Death or Major Injuries Toxic Envir Damage >>$1,000,000 Damage
Almost certain - expected in normal circumstances (100%)	**MODERATE RISK**	**HIGH RISK**	**HIGH RISK**	**CRITICAL RISK**	**CRITICAL RISK**
Likely – probably occur in most circumstances (10%)	**MODERATE RISK**	**MODERATE RISK**	**HIGH RISK**	**HIGH RISK**	**CRITICAL RISK**
Possible – might occur at some time. (1%)	**LOW RISK**	**MODERATE RISK**	**HIGH RISK**	**HIGH RISK**	**CRITICAL RISK**
Unlikely – could occur at some future time (0.1%)	**LOW RISK**	**MODERATE RISK**	**MODERATE RISK**	**HIGH RISK**	**HIGH RISK**
Rare - Only in exceptional circumstances 0.01%)	**LOW RISK**	**LOW RISK**	**MODERATE RISK**	**MODERATE RISK**	**HIGH RISK**

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 129 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Heat Stress Prevention

Purpose
To inform and protect workers from heat exposure and heat stress.

Scope
Operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing heat stress in employees engaged in such operations. Such places include: iron and steel foundries, nonferrous foundries, brick-firing and ceramic plants, glass products facilities, rubber products factories, electrical utilities (particularly boiler rooms), bakeries, confectioneries, commercial kitchens, laundries, food canneries, chemical plants, mining sites, smelters, and steam tunnels.

Outdoor operations conducted in hot weather, such as construction, refining, asbestos removal, and hazardous waste site activities, especially those that require workers to wear semi permeable or impermeable protective clothing, are also likely to cause heat stress among exposed workers.

Responsibilities
It is the responsibility of the Superintendent to recognize when temperature and humidity are becoming a stress to employees.

Special Definitions

Procedure
1.0 CAUSAL FACTORS

1.1 Age, weight, degree of physical fitness, degree of acclimatization, metabolism, use of alcohol or drugs, and a variety of medical conditions such as hypertension all affect a person's sensitivity to heat. However, even the type of clothing worn must be considered. Prior heat injury predisposes an individual to additional injury. It is difficult to predict just who will be affected and when, because individual susceptibility varies. In addition, environmental factors include more than the ambient air temperature. Radiant heat, air movement, conduction, and relative humidity all affect an individual's response to heat.

2.0 HEAT DISORDERS AND HEALTH EFFECTS

2.1 Heat Stroke

2.1.1 HEAT STROKE occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict.

Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of work load and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

2.1.2 If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

2.1.3 Regardless of the worker's protests, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

2.2 Heat Exhaustion

2.2.1 The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.

2.2.2 Workers suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

2.3 Heat Cramps

2.3.1 HEAT CRAMPS are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused by both too much and too little salt. Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution (±0.3% NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

2.3.2 Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Recent studies have shown that drinking commercially available carbohydrate-electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

2.4 Heat Collapse

2.4.1 HEAT COLLAPSE ("Fainting"). In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. To prevent heat collapse, the worker should gradually become acclimatized to the hot environment.

2.5 Heat Rashes

2.5.1 HEAT RASHES are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by un-evaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

2.6 Heat Fatigue

2.6.1 HEAT FATIGUE is a factor that predisposes an individual to heat fatigue is lack of acclimatization. The use of a program of acclimatization and training for work in hot environments is advisable. The signs and symptoms of heat fatigue include impaired performance of skilled sensor motor, mental, or vigilance jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.

3.0 CONTROL

3.1 Ventilation, air cooling, fans, shielding, and insulation are the five major types of engineering controls used to reduce heat stress in hot work environments. Heat reduction can also be achieved by using power assists and tools that reduce the physical demands placed on a worker.

3.1.1 However, for this approach to be successful, the metabolic effort required for the worker to use or operate these devices must be less than the effort required without them. Another method is to reduce the effort necessary to operate power assists. The worker should be allowed to take frequent rest breaks in a cooler environment.

3.2 Acclimatization

3.2.1 The human body can adapt to heat exposure to some extent. This physiological adaptation is called acclimatization. After a period of acclimatization, the same activity will produce fewer cardiovascular demands. The worker will sweat more efficiently (causing better evaporative cooling), and thus will more easily be able to maintain normal body temperatures.

3.2.2 A properly designed and applied acclimatization program decreases the risk of heat-related illnesses. Such a program basically involves exposing employees to work in a hot environment for progressively longer periods. NIOSH (1986) says that, for workers who have had previous experience in jobs where heat levels are high enough to produce heat stress, the regimen should be 50% exposure on day one, 60% on day two, 80% on day three, and 100% on day four. For new workers who will be similarly exposed, the regimen should be 20% on day one, with a 20% increase in exposure each additional day.

3.3 Fluid Replacement

3.3.1 Cool (50°-60°F) water or any cool liquid (except alcoholic beverages) should be made available to workers to encourage them to drink small amounts frequently, e.g., one cup every 20 minutes. Ample supplies of liquids should be placed close to the work area. Although some commercial replacement drinks contain salt, this is not necessary for acclimatized individuals because most people add enough salt to their summer diets.

3.4 Engineering Controls

3.4.1 General ventilation is used to dilute hot air with cooler air (generally cooler air that is brought in from the outside). This technique clearly works better in cooler climates than in hot ones. A permanently installed ventilation system usually handles large areas or entire buildings. Portable or local exhaust systems may be more effective or practical in smaller areas.

3.4.2 Air treatment/air cooling differs from ventilation because it reduces the temperature of the air by removing heat (and sometimes humidity) from the air.

3.4.3 Air conditioning is a method of air cooling, but it is expensive to install and operate. An alternative to air conditioning is the use of chillers to circulate cool water through heat exchangers over which air from the ventilation system is then passed; chillers are more efficient in cooler climates or in dry climates where evaporative cooling can be used.

3.4.4 Local air cooling can be effective in reducing air temperature in specific areas. Two methods have been used successfully in industrial settings. One type, cool rooms, can be used to enclose a specific workplace or to offer a recovery area near hot jobs. The second type is a portable blower with built-in air chiller. The main advantage of a blower, aside from portability, is minimal set-up time.

3.4.5 Another way to reduce heat stress is to increase the air flow or **convection** using fans, etc. in the work area (as long as the air temperature is less than the worker's skin temperature). Changes in air speed can help workers stay cooler by increasing both the convective heat exchange (the exchange between the skin surface and the surrounding air) and the rate of evaporation. Because this method does not actually cool the air, any increases in air speed must impact the worker directly to be effective.

3.4.6 If the dry bulb temperature is higher than 35°C (95°F), the hot air passing over the skin can actually make the worker hotter. When the temperature is more than 35°C and the air is dry, evaporative cooling may be improved by air movement, although this improvement will be offset by the convective heat. When the temperature exceeds 35°C and the relative humidity is 100%, air movement will make the worker hotter. Increases in air speed have no effect on the body temperature of workers wearing vapor-barrier clothing.

3.4.7 Heat conduction methods include insulating the hot surface that generates the heat and changing the surface itself.

3.4.8 Simple engineering controls, such as shields, can be used to reduce radiant **heat,** i.e. heat coming from hot surfaces within the worker's line of sight. Surfaces that exceed 35°C (95°F) are sources of infrared radiation that can add to the worker's heat load. Flat black surfaces absorb heat more than smooth, polished ones.

Having cooler surfaces surrounding the worker assists in cooling because the worker's body radiates heat toward them.

3.4.9 With some sources of radiation, such as heating pipes, it is possible to use both insulation and surface modifications to achieve a substantial reduction in radiant heat. Instead of reducing radiation from the source, shielding can be used to interrupt the path between the source and the worker. Polished surfaces make the best barriers, although special glass or metal mesh surfaces can be used if visibility is a problem.

3.4.10 Shields should be located so that they do not interfere with air flow, unless they are also being used to reduce convective heating. The reflective surface of the shield should be kept clean to maintain its effectiveness.

3.5 Administrative Controls and Work Practices

3.5.1 Training is the key to good work practices. Unless all employees understand the reasons for using new, or changing old, work practices, the chances of such a program succeeding are greatly reduced.

3.5.2 NIOSH (1986) states that a good heat stress training program should include at least the following components:

3.5.2.1 Knowledge of the hazards of heat stress;

3.5.2.2 Recognition of predisposing factors, danger signs, and symptoms;

3.5.2.3 Awareness of first-aid procedures for, and the potential health effects of, heat stroke;

3.5.2.4 Employee responsibilities in avoiding heat stress;

3.5.2.5 Dangers of using drugs, including therapeutic ones, and alcohol in hot work environments;

3.5.2.6 Use of protective clothing and equipment; and

3.5.2.7 Purpose and coverage of environmental and medical surveillance programs and the advantages of worker participation in such programs.

3.5.3 Hot jobs should be scheduled for the cooler part of the day, and routine maintenance and repair work in hot areas should be scheduled for the cooler seasons of the year.

3.6 Other Administrative Controls

3.6.1 The following administrative controls can be used to reduce heat stress:

3.6.1.1 Reduce the physical demands of work, e.g., excessive lifting or digging with heavy objects;

3.6.1.2 Provide recovery areas, e.g., air-conditioned enclosures and rooms;

3.6.1.3 Use shifts, e.g., early morning, cool part of the day, or night work;

3.6.1.4 Use intermittent rest periods with water breaks;

3.6.1.5 Use relief workers;

3.6.1.6 Use worker pacing; and

3.6.1.7 Assign extra workers and limit worker occupancy, or the number of workers present, especially in confined or enclosed spaces.

4.0 PERSONAL PROTECTIVE EQUIPMENT

4.1 Wetted clothing is another simple and inexpensive personal cooling technique. It is effective when reflective or other impermeable protective clothing is worn. The clothing may be wetted terry cloth coveralls or wetted two-piece, whole-body cotton suits. This

approach to auxiliary cooling can be quite effective under conditions of high temperature and low humidity, where evaporation from the wetted garment is not restricted.

4.2 Circulating air is the most highly effective, as well as the most complicated, personal cooling system. By directing compressed air around the body from a supplied air system, both evaporative and convective cooling is improved. The greatest advantage occurs when circulating air is used with impermeable garments or double cotton overalls.

4.3 One type, used when respiratory protection is also necessary, forces exhaust air from a supplied-air hood ("bubble hood") around the neck and down inside an impermeable suit. The air then escapes through openings in the suit. Air can also be supplied directly to the suit without using a hood in three ways:

4.3.1 By a single inlet;

4.3.2 By a distribution tree; or

4.3.3 By a perforated vest.

4.4 In addition, a vortex tube can be used to reduce the temperature of circulating air. The cooled air from this tube can be introduced either under the clothing or into a bubble hood. The use of a vortex tube separates the air stream into a hot and cold stream; these tubes also can be used to supply heat in cold climates. Circulating air, however, is noisy and requires a constant source of compressed air supplied through an attached air hose.

4.5 One problem with this system is the limited mobility of workers whose suits are attached to an air hose. Another is that of getting air to the work area itself. These systems should therefore be used in work areas where workers are not required to move around much or to climb. Another concern with these systems is that they can lead to dehydration. The cool, dry air feels comfortable and the worker may not realize that it is important to drink liquids frequently.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 168 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Hexavalent Chromium Awareness Program

Purpose
The purpose of this hexavalent chromium awareness program is to help ensure Newkirk Novak employees and subcontractors worker exposure levels to hexavalent chromium are accurately assessed, and workers are not exposed to hexavalent chromium at levels that are above the Permissible Exposure Limit (PEL) of 5 micrograms per cubic meter (ug/m3). It is also the intent of NNCP to be in compliance with 29 CFR 1910.1026 and 1926.1126.

Scope
This document applies to all employees that may be occupationally exposed to Hexavalent Chromium.

Responsibilities

Introduction
Hexavalent chromium is essential to a number of industrial applications: chromate pigments are used in dyes, ink and plastics, chromic acid is used in chrome plating and chromates are used to prevent corrosion in paints and other coatings. While these compounds can be very beneficial, they can also be harmful or lethal to those employees exposed to them. This program discusses the safe work practices these workers must follow to avoid exposures to this hazardous substance.

Procedure
1.0 Characteristics and Properties of Hexavalent Chromium

1.1 Chromium is an element which may have various valence states. A valence state refers to how many electrons are available to bond with other elements and compounds.

1.2 Hexavalent chromium compounds are almost always man-made and are used in a variety of industries. Some of the prominent uses of hexavalent chromium in industry include chromate pigments in dyes, inks, and plastics, chrome-plating in which chromium metal is deposited on a surface using chromic acid and chromates used to prevent corrosion in paints, primers and other coatings.

1.3 Hexavalent chromium can also be found as a byproduct of industrial processes and maintenance operations. Welders can be exposed to chromium (VI) when fumes are released while welding stainless steels, chromium alloys and chrome-coated metal.

1.4 Particles may also be released during smelting of ferro-chromium ore and trace amounts may also be found in portland cement. Chromium (VI) compounds are essential in many

industrial applications; however they can be harmful or lethal to those employees who are exposed to them.

2.0 Effects of Inhalation

2.1 Inhalation is the primary route of entry. Employees can inhale dusts, mists and fumes containing chromium (VI) while performing tasks such as welding on stainless steel or applying paints and coatings containing chromates.

2.2 Repeated or prolonged exposure to the inhalation of hexavalent chromium can lead to harmful health effects including bronchitis, pneumonia, asthma, and lung cancer. Some symptoms of inhalation exposure to chromium (VI) include a runny nose, sneezing, coughing, itching and a burning sensation. Chronic exposure may also produce sores in the nose, nosebleeds and in severe cases a perforation of the wall separating the nasal passages.

3.0 Effects of Skin Exposures

3.1 Some employees who come in contact with hexavalent chromium may develop an allergic reaction known as allergic contact dermatitis. When an employee becomes allergic, brief skin contact causes swelling and a red, itchy rash; allergic contact dermatitis becomes longer lasting and more severe with repeated skin exposure.

3.2 Direct skin contact with chromatic substances can also lead to skin ulcers. These are small, crusted skin sores that heal slowly and leave scars. These are commonly referred to as “chrome holes.”

4.0 Other Exposures

4.1 Direct eye contact with chromate dust or chromic acid can cause permanent eye damage. Dust particles of chromium can contaminate clothing, hands, food and other items and lead to ingestion by employees. Damage to the liver, kidneys and gastrointestinal system has been experienced by individuals who have ingested high levels of hexavalent chromium. Some symptoms of chromium (VI) ingestion include severe abdominal pain, vomiting and hemorrhaging.

5.0 Engineering & Work Practice Controls

5.1 To protect workers, exposure to hexavalent chromium must be reduced to the permissible exposure limit or below. Engineering and work practice controls are the primary means used to reduce exposure. Examples of engineering controls include substituting a less toxic material for chromium (VI).

5.2 Changing a process to reduce exposure is another example. For example, TIG welding on stainless steel reduces exposure compared to traditional stick welding. Also, isolating the source of exposure with barriers and reducing the hazard with ventilation and exhaust systems are examples of engineering controls.

5.3 If engineering and work practice controls do not sufficiently reduce exposure, then appropriate respirators must be used to further reduce employee exposure to the permissible exposure limit or below.

6.0 Protective Clothing & Equipment

6.1 You will be supplied with protective clothing and equipment if skin or eye contact with hexavalent chromium is likely.

6.2 Be sure you know precisely what protection is needed for each job task you perform and be sure you wear it. Simple tasks may only require gloves for adequate protection while others may require a higher level of protection.

6.3 If you must change out of your street clothes to use protective clothing and equipment, you are required to do so in a change room. Change rooms must have separate storage facilities for street and work clothing to prevent contamination of employees' street clothes.

6.4 You are only required to use the change room if you have to remove your street clothes. If you can wear gloves, aprons or other equipment effectively over your street clothes, putting them on in a change room is not necessary.

7.0 Importance of Proper Housekeeping

7.1 When dealing with chromium (VI), proper housekeeping is critical to minimize exposure. Chromium (VI) that settles on ledges, equipment, floors and other surfaces should be removed as soon as possible to prevent it from becoming airborne and to minimize the risk of skin contact.

7.2 Clean surfaces contaminated with Chromium (VI) with a HEPA-filtered vacuum or by wet sweeping or wet scrubbing. Dry brushing, sweeping and using compressed air are usually prohibited because they disperse chromium into the air.

8.0 Responding to Exposures

8.1 If hexavalent chromium comes into contact with the skin, go to an approved washing facility to cleanse any areas where skin contact has occurred. When there is substantial contact, the area should be washed with mild soap and water. If chromium (VI) contacts your eyes, get to an eyewash station as soon as possible and flush your eyes for at least 15 minutes with a steady stream of water. You will need a prompt examination by a physician after flushing your eyes to determine the need for additional treatment.

Jobsite Safety Rules SOP 205

1. 100% hard hats are required at all times.
2. 100% safety glasses are required at all times. Full face shield when cutting/grinding.
3. 100% hi- vis safety clothing (Vests, Shirts, Jackets).
4. 100% fall protection over 6' at all times.
5. Sturdy, heavy-duty hard soled work boots are required.
6. Shorts, tanks tops, or tennis shoes are not allowed on the job site.
7. Report all incidents and near misses immediately to NNCP.
8. Crane annual Inspections required. Qualified Crane operator(s) must provide the jobsite superintendent with a copy of their qualification.
9. All rigging must be inspected prior to each lift. Trained signal persons must be identified. Qualified rigger(s) must provide the jobsite superintendent with a copy of their qualification.
10. Preplan routes to avoid hoisting over workers.
11. Taglines are required on all hoisted loads.
12. Only trained and qualified workers are allowed to operate lifts.
13. All scissor lifts must have pothole protectors.
14. Any worker operating or using Mechanized Equipment (aerial lift, scissor lift, forklift, skid-steer, crane, etc.) must provide training cards/certifications to NNCP prior to operating any mechanized equipment on site.
15. Hot work permits must be completed prior to hot work starting. Permit can be obtained through NNCP.
16. A 30-minute Fire Watch is required post hot work activity.
17. 20lb ABC Fire Extinguishers are required in all common and hot work areas.
18. Safety Manuals and SDS Sheets must be submitted to NNCP and maintained by each employer. Any active chemicals on-site must have an SDS available upon request.
19. A written Exposure Control Plan is required when exposure to Silica meets the standard requirements. If a concern with silica exposure exists, notify the jobsite superintendent immediately for further action to be taken.
20. No entry allowed into confined space w/o a pre-work meeting to discuss required safe entry procedures. Permits are required.

21. Make sure locates are made before you dig.
22. Watch for overhead lines. No work is allowed closer than 20’ to any overhead power.
23. All excavation’s 5’ and deeper will be sloped, benched, or shored.
24. The competent person is responsible for the scaffold erection and dismantles.
25. GFCI protection is required at all times on the job site. GFCI’s must be inspected regularly.
26. Extension cords and tools must be inspected prior to each use.
27. All tools need to be checked daily for wear and damage.
28. Any damaged tool needs to be taken out of service and repaired or replaced.
29. The proper use of Red Danger tape and Yellow Caution tape in the work areas.
30. Working over the top of other workers is prohibited. Warning signs, and or barricades are required.
31. Maintain good housekeeping at all times. Pick-up as you go.
32. Cords shall be protected and kept out of aisles, walkways, and paths of egress.
33. Only authorized persons shall be allowed on the job site.
34. Park in designated areas only. Violators could be towed at owner’s expense.
35. This project requires OSHA 10 for all workers
36. Smoking is permitted in designated smoking areas only.
37. Fall protection violations have a 2-step enforcement policy for Contractors. Written warning then removal from the jobsite for the duration of the project.
38. General safety violations have a 3-step enforcement policy for Contractors. Verbal, written then removal from the jobsite for the duration of the project.
39. The following programs are being implemented on this project.
    a. Hazardous Communications Program
    b. Lockout/Tagout Program
    c. Emergency Action Plan

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 124 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Ladder and Stairway Safety

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

Create an awareness of the hazards among our workforce
Standardize procedures for use and care of the equipment
Provide a consistent format for training employees on the proper procedures to be used
Minimize the possibility of injury or harm to our employees

The procedures establish guidelines to be followed whenever an employee works with ladders or stairways.

Scope
This document applies to all employees using ladders and stairs

Responsibilities
See Procedure section for Responsibilities

Special Definitions

Procedure
1.0 ADMINISTRATIVE DUTIES

1.1 The Superintendent or their designee is responsible for properly maintaining this written Stairway and Ladder Safety Plan.

2.0 PORTABLE LADDERS

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

2.2 Newkirk Novak will inspect all wood ladders prior to their use to assure they are:

2.2.1 Free from sharp edges and splinters

2.2.2 Sound and free from accepted visual inspection from shake, wane, compression failures, decay, or other irregularities

2.3 Portable metal ladders chosen for use by Newkirk Novak are:

2.3.1 Designed without structural defects or accident hazards such as sharp edges, burrs,

etc.

2.3.2 Of sufficient strength to meet the test requirements

2.3.3 Protected against corrosion unless inherently corrosion-resistant

3.0 WORK PRACTICES

3.1 When ascending or descending, the climber must face the ladder.

3.2 Portable ladders are designed as a one-person working ladder based on a 200-pound load and will be used accordingly.

3.3 Portable rung and cleat ladders will be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). Example: If the wall is 20 feet in height, the bottom of the ladder must be 5 feet from the base of the wall. A simple way to test this is to stand with feet at the base of the ladder and arms straight out, if it is possible to grab the rung at shoulder height without leaning forward or backward the ladder is approximately 1:4.

3.4 The ladder will be so placed as to prevent slipping, or it will be lashed, or held in position. The ladder base section must be placed with a secure footing.

3.5 Employees will equip all portable rung ladders with nonslip bases when there is a hazard of slipping. However, nonslip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used on oily, metal, concrete, or slippery surfaces.

3.6 The top of the ladder must be placed with the two rails supported unless equipped with a single support attachment.

3.7 On two-section extension ladders, the minimum overlap for the two sections in use will be according to OSHA specifications.

3.8 Portable rung ladders with reinforced rails will be used only with the metal reinforcement on the underside.

3.9 The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.

3.10 Ladders will not be:

3.10.1 Used in a horizontal position as platforms, runways, or scaffolds

3.10.2 Placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded

3.10.3 Placed on boxes, barrels, or other unstable bases to obtain additional height

3.10.4 Tied or fastened together to provide longer sections (ladders must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses)

3.10.5 Used to gain access to a roof unless the top of the ladder extends at least 3 feet above the point of support, at eave, gutter, or roofline

3.10.6 Used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended unless specifically recommended for use by the manufacturer

3.11 Ladders for which dimensions are specified should not be used by more than one person at a time nor with ladder jacks and scaffold planks where use by more than one person is anticipated

3.12 Ladders with broken or missing steps, rungs, or cleats; broken side rails; or other faulty

equipment must not be used. Employees finding ladders with any of these conditions must report them to their Supervisor/Foreman. Improvised repairs may not be made.

3.13 Ladders made by fastening cleats across a single rail will not be used.

3.14 Tops of the ordinary types of stepladders will not be used as steps.

3.15 Middle and top sections of sectional or window cleaner's ladders will not be used for a bottom section unless the user equips them with safety shoes.

4.0 INSPECTIONS AND MAINTENANCE

4.1 Ladders will be inspected prior to each use to insure safety and serviceability.

4.2 Ladders will be thoroughly inspected by a competent person on a quarterly basis. The competent person will document the findings and keep records of the inspections.

4.3 Ladders will be maintained in good usable condition at all times.

4.4 The joint between the steps and side rails is kept tight, all hardware and fittings are securely attached, and the movable parts operate freely without binding or undue play

4.5 Frayed or badly worn rope will be replaced.

4.6 Safety feet and other auxiliary equipment will be kept in good condition to insure proper performance.

4.7 Ladders which have developed defects will be withdrawn from service for repair or destruction and tagged or marked as ***Dangerous, Do Not Use***.

4.8 If ladders tip over the competent person will immediately:

4.8.1 Inspect the ladder for side rails dents or bends, or excessively dented rungs

4.8.2 Check all rung-to-side-rail connections

4.8.3 Check hardware connections

4.8.4 Check rivets for shear

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

5.0 FIXED LADDERS

5.1 Fixed ladders are provided according to OSHA specifications for design, clearance, and pitch.

5.2 All fixed ladders are maintained in a safe condition.

5.3 Fixed ladders are inspected prior to each use.

6.0 TRAINING

6.1 All employees who work on ladders and stairways will be trained prior to their use.

6.2 Training will be provided by a competent person.

6.3 Elements included in the training program include the safe work practices and other requirements of this written plan.

7.0 DISCIPLINARY PROCEDURES

7.1 Constant awareness of and respect for stairway and ladder safety procedures and compliance with all safety rules are considered conditions of employment. Newkirk Novak reserves the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this stairway and ladder safety program.

8.0 PROGRAM EVALUATION

8.1 Although Newkirk Novak may not be able to eliminate all problems, we try to eliminate as many as possible to improve employee protection and encourage employee safe practices. Therefore, the Superintendent or designee is responsible for evaluating and updating this written plan. The evaluation will include a review of reported accidents, as well as near misses, to identify areas where additional safety measures need to be taken.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 156 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Lead Program

Purpose
The purpose of this program is to ensure that the hazards involving lead are evaluated and controlled in the workplace.

This Program will be used to make employees aware of the safety and health hazards associated with lead in our facilities.

Scope
This Program applies to all employees that work around lead.

Responsibilities
See procedure section for responsibilities

Special Definitions and Information

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. It has no special taste or smell. Lead can be found in all parts of our environment. Most of it came from human activities like mining, manufacturing, and the burning of fossil fuels.

Lead has many different uses, most importantly in the production of batteries. Lead is also in ammunition, metal products (solder and pipes), roofing, and devices to shield x-rays.

Facts about lead include the following:

Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.

When released to the air from industry or burning of fossil fuels or waste, it stays in air about 10 days.

Most of the lead in soil comes from particles falling out of the air.

City soils also contain lead from landfills and leaded paint.

Lead sticks to soil particles.

It does not move from soil to underground water or drinking water unless the water is acidic or "soft."

It stays a long time in both soil and water.

Procedure

1.0 EXPOSURE/EFFECTS

1.1 You can be exposed to lead in a variety of ways, including the following:

- **1.1.1** Breathing workplace air (lead smelting, refining, and manufacturing industries)
- **1.1.2** Eating lead-based paint chips
- **1.1.3** Drinking water that comes from lead pipes or lead soldered fittings
- **1.1.4** Breathing or ingesting contaminated soil, dust, air, or water near waste sites
- **1.1.5** Breathing tobacco smoke
- **1.1.6** Eating contaminated food grown on soil containing lead or food covered with lead-containing dust
- **1.1.7** Breathing fumes or ingesting lead from hobbies that use lead (leaded-glass, ceramics

1.2 Lead can affect almost every organ and system in the body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed.

1.3 Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common after exposure to high levels of lead.

1.4 In adults, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can cause abortion and damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

1.5 In addition, the Department of Health and Human Services (DHHS) has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in humans.

2.0 PROTECTION

2.1 OSHA limits the concentration of lead in workroom air to 50 micrograms per cubic meter for an eight-hour workday. This is the permissible exposure limit. OSHA has also specified an action level of 30 micrograms/cubic meter for an eight-hour workday. If a worker has a blood lead level of 40 micrograms/deciliter, OSHA requires that the worker be removed from the workroom. The exposure level will be measured using air monitoring equipment as deemed necessary.

2.2 If lead is present in the workplace in any quantity, Newkirk Novak is required to make determinations of whether OSHA’s action level for workers has been reached or exceeded. Newkirk Novak must also notify workers of their results.

2.3 The most effective way for Newkirk Novak to protect its workers exposed beyond the permissible exposure limits is to minimize exposure through the use of engineering controls such as ventilation, encapsulation, substitution, and isolation from employees. Good work practices can also be effective. These include housekeeping and good personal hygiene practices.

3.0 PERSONNEL PROTECTIVE EQUIPMENT

3.1 All necessary PPE deemed necessary by a PPE or Hazard assessment including but not be limited to Gloves, hats, vented goggles, shoes or shoes covers (disposable) shall be provided at NO COST to employees of _____.

3.2 All PPE shall be kept clean and in useable condition. Newkirk Novak will clean, launder or replace all PPE as need not to exceed one month intervals.

4.0 TRAINING

4.1 Institute training program for and assure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists. Initial training must be provided prior to the time of initial job assignment for those employees subsequently covered. Repeat the training program at least annually for each employee. Training includes the topics listed here:

4.1.1 The content of the rule (29 CFR 1910.1025) and its appendices. If there is a potential exposure to airborne lead at any level, Newkirk Novak must inform employees of the content of Appendices A and B of this regulation. Include, among other things, coverage of lead hazards, the danger of lead to the body, and employee rights under the rule.

4.1.2 The specific nature of the operations which could result in exposure to lead above the action level

4.1.3 The purpose, proper selection, fitting, use, and limitations of respirators

4.1.4 The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead(with particular attention to the adverse reproductive effects on both males and females). This could include blood sampling monitoring and employee notification.

4.1.5 The engineering controls and work practices associated with the employee's job assignment

4.1.6 The contents of any compliance plan in effect

4.1.7 Instructions to employees that chelating agents must not routinely be used to remove lead from their bodies and must not be used at all except under the direction of a licensed physician.

4.1.8 Distribute to employees, any materials pertaining to the Occupational Safety and Health Act, the regulations issued pursuant to that Act, and 29 CFR 1910.1025, which are made available by the Department of Labor.

4.1.9 If needed decontamination, changing areas and washing facilities will be provided.

4.2 Provide, upon request, all materials relating to the employee information and training program to the Department of Labor.

Lead	**CAS** 7439-92-1
Pb	**RTECS OF7525000**
Synonyms & Trade Names **Lead metal, Plumbum**	**DOT ID & Guide**
Exposure	**NIOSH REL*: TWA 0.100 mg/m3 [*Note:**

Limits		**The REL also applies to other lead compounds (as Pb)]**	
		OSHA PEL*: [1910.1025] TWA 0.050 mg/m3 [*Note: The PEL also applies to other lead compounds (as Pb).]	
IDLH 100 mg/m3 (as Pb)		**Conversion**	
Physical Description A heavy, ductile, soft, gray solid.			
MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 11.34
Fl.P: NA	UEL: NA	LEL: NA	
Noncombustible Solid in bulk form.			
Incompatibilities & Reactivities Strong oxidizers, hydrogen peroxide, acids			
Measurement Method **Filter; HNO3/H2O2; Flame atomic absorption spectrometry; IV [#7082] [Also #7105, #7300, #7700, #7701, #7702]**			
Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: Daily Remove: When wet or contaminated Change: Daily		**First Aid** Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately	
Respirator Recommendations OSHA Up to 0.5 mg/m^3: (APF = 10) Any air-purifying respirator with a high-efficiency particulate filter/(APF = 10) Any supplied-air respirator Up to 1.25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode/(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter Up to 2.5 mg/m^3: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece Up to 50 mg/m^3: (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode Up to 100 mg/m^3: (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000)			

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus
Exposure Routes inhalation, ingestion, skin and/or eye contact
Symptoms weakness, lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypotension
Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue

5.0 EXPOSURE LIMITS

5.1 No employee shall exceed fifty (50) micrograms per cubic meter of air in an 8 hour period. This shall be assured with on sight monitoring conducted by a trained person.

5.2 All medical exams shall be conducted in accordance with OSHA requirements. This insures that all employees who may be exposed above the action level for more than 30 days receive a medical examination by a licensed medical professional. This shall be done at NO cost to the employee.

5.3 This will also include blood sampling every 6 months until 2 consecutive blood samples and analysis are acceptable. This type of medical sampling shall be done monthly if any employee has need to be removed for high exposure or elevated blood lead levels. In this case all employees will be notified within 5 days of elevated levels. Any employee that requires removal due to elevated levels will be provided Medical Removal Protection Benefits.

6.0 RESPIRATORS

6.1 If any type or form of repertory protection becomes necessary the employee may choose type of respirator at no cost to him or her. Please see the Respiratory program for more information. This might include but not be limited to air purifying respirators, supplied air respirators or self contained breathing apparatus.

7.0 LEAD CHECKLIST

7.1 A written compliance program is in place

7.2 Employees are aware of the hazards involved with lead

7.3 A training program has been instituted for all employees who are subject to exposure to lead

7.4 All needed signage is posted when area has been determined to exceed safe limits

7.5 Employee exposure to lead is monitored and kept within acceptable levels

7.6 Employees are provided with proper protective equipment

7.7 Engineering and work practice controls are used to reduce exposures to a permissible level
7.8 Proper precautions are taken when handling lead
7.9 Caution labels and signs are used to warn of lead
7.10 A regulated area has been established, and marked, where lead is manufactured, processed, used, repackaged, released, handled, or stored
7.11 Employees who work with lead wash their hands after assigned tasks are completed and before engaging in other activities
7.12 Lead is stored and used appropriately
7.13 Containers used to store lead are appropriately marked
7.14 All employees who work with lead have had an initial medical examination
7.15 A medical surveillance program is in place for employees who become exposed to lead
7.16 Appropriate records are maintained (exposure monitoring, medical surveillance, etc.)
7.17 Employees are instructed in proper first aid and other emergency procedures
7.18 Emergency procedures are in place for dealing with emergency situations involving lead

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 110 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Lockout/Tagout

Purpose
The purpose of this program is to establish lockout/tagout procedures to prevent unintended release of stored energy in order to provide safe working conditions during maintenance of powered equipment.

Scope
This document is applicable to all personnel working on or near equipment with live or stored energy.

Responsibilities
The Safety Director/Superintendent shall be responsible for establishment and implementation of this program.

Special Definitions

Procedure
1.0 ESTABLISH A WRITTEN PROGRAM

- **1.1** Conduct a survey of the entire facility to determine locations of all hazardous energy sources.
- **1.2** Devise methods to control unintended operation of machines or equipment being serviced or maintained.
- **1.3** Establish procedures for affixing appropriate lockout or tagout devices and to otherwise disable machines or equipment to prevent unexpected energization and startup or release of stored energy in order to prevent injury to the employee. This may also include blocking of movable parts which may cause a hazard.

2.0 ENERGY CONTROL DEVICES

- **2.1** Protective Control Devices
  - **2.1.1** Protective material and devices
    - **2.1.1.1** Locks
    - **2.1.1.2** Key blocks
    - **2.1.1.3** Self-locking fasteners
    - **2.1.1.4** Adapter pins
    - **2.1.1.5** Chains
    - **2.1.1.6** Tags
    - **2.1.1.7** Wedges

2.2 All lockout/tagout devices shall be identified and used only for the purpose they are intended and used as follows:

2.2.1 Durable lockout/tagout devices shall be capable of withstanding the environment in which they are used.

2.2.2 Tags shall be capable of withstanding weather, damp locations and corrosive environments.

2.2.3 All lockout/tagout devices shall be uniform in color, shape or size.

2.2.4 Their installer shall only remove Lockout/tagout devices.

2.2.5 Lockout/tagout devices shall be substantial enough to prevent inadvertent or accidental removal and shall indicate the identity of the employee using the device and a warning of what precautions to take.

2.2.6 Lockout/tagout procedures shall be used in preference to tagout procedures where possible.

3.0 PERIODIC INSPECTIONS

3.1 Periodic inspection of the energy control procedures shall be conducted annually.

3.2 An authorized employee other than the one(s) utilizing the energy control procedures being inspected shall perform the periodic inspection.

3.3 The periodic inspection shall be designed to correct any deviations or inadequacies observed.

3.4 Where lockout it used for energy control the periodic inspection shall include a review which shall explain the responsibilities of the inspector and the energy control procedure being inspected.

4.0 TRAINING

4.1 Essential Elements

4.1.1 Each affected employee shall be instructed in the purpose and the use of the energy control procedures by the Maintenance Supervisor.

4.1.2 All other employees whose work operations are, or may be, in an area where energy control procedures may be utilized shall be instructed about the procedures and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

4.1.3 Personnel who will be exposed to live energized electrical parts of equipment will receive additional training in safe work practices as described in 29 CFR 1910.333 (110-D).

4.2 Tagging Limitations

4.2.1 Inform employees that tags do not afford the same protection as a lock.

4.2.2 Tags are not to be removed without the authorization of the installer.

4.2.3 Tags must be legible and be made familiar to all employees whose work is affected or may be in affected areas.

4.2.4 Tags and means of attachment must be capable of withstanding environmental conditions in the work place.

4.2.5 Tagout devices shall be non-reusable and self-locking with a minimum unlocking strength of no less than 50 pounds.

4.2.6 Tags often evoke a false sense of security and their importance needs to be clearly understood by employees.

5.0 RETRAINING

5.1 Re-training should be established under the following conditions:

- **5.1.1** There is a change in job assignment
- **5.1.2** A change in machines or equipment
- **5.1.3** Equipment or processes present a new hazard
- **5.1.4** A change in energy control procedures
- **5.1.5** There are deviations or inadequacies detected in the procedures
- **5.1.6** New or revised control methods are used

6.0 CONTROL

6.1 Elements and Actions

- **6.1.1** Make employees aware of the type and magnitude of hazardous energy.
- **6.1.2** All affected employees shall be informed of the physical locations of energy isolation devices.
- **6.1.3** All machines or devices with more than one power source shall have a written lockout procedure attached to the machine, outlining the lockout procedures, identification and location of the lockout/tagout means, and restarting procedures. A copy of this procedure shall be filed with this program (110-A).

6.2 Lockout/Tagout of Energy Isolation Devices

- **6.2.1** Only trained and authorized employees shall affix energy isolating devices.
- **6.2.2** Devices are to be affixed in such a manner that they will hold the energy-isolating device in a safe on or off position.
- **6.2.3** Where tagout devises are used the energy-isolating device is to be fastened at the same point at which a lock would have been attached.
- **6.2.4** If a tag cannot be affixed directly to the energy-isolating device, it should be located where it will be immediately obvious to potential operators.
- **6.2.5** Whenever major replacement, repair, renovation or modification of machines or equipment is performed and whenever new machines or equipment are installed, energy isolation devices shall be designed to accept a lockout device.

6.3 Stored Energy

- **6.3.1** After lockout or tagout devices have been applied, stored energy or residual energy shall be relieved, disconnected, restrained and otherwise rendered safe whenever possible.
- **6.3.2** If re-accumulation of stored energy to a hazardous level can take place, verification or isolation shall continue when service or maintenance is being performed until work is completed.
- **6.3.3** Prior to service or maintaining machines or equipment, employees must verify that the energy isolation and de-energization of the machines or equipment have been accomplished.

7.0 RELEASE FROM LOCKOUT OR TAGOUT

7.1 Before removing lockout or tagout devices from machines and equipment authorized employees must take certain precautions.

- **7.1.1** Inspect the work area to insure non-essential items have been removed.
- **7.1.2** Check the work area to see that all employees have been safely positioned or removed.

7.1.3 Before removing lockout or tagout devices, notify all affected employees.

7.2 Before lockout or tagout devices are removed and energy is restored, procedures shall be taken by authorized employees to ensure the following.

7.2.1 If the employee who applied the lockout or tagout device is unavailable, the device may only be removed under the Integrator.

7.2.2 The Safety Director/Operations Manager will verify that the employee who applied the device is not at the facility.

7.2.3 The Safety Director/Operations Manager will make all reasonable efforts to contact the employee to inform them that their device has been removed.

7.2.4 The Safety Director/Operations Manager will inform the employee the device has been removed before they return to work.

8.0 OUTSIDE CONTRACTORS

8.1 Management and contractors will inform each other of their respective lockout or tagout procedures.

8.2 The Operations Manager will train all affected employees on restrictions and prohibitions of contractor's energy control procedures.

9.0 GROUP LOCKOUT OR TAGOUT

9.1 Procedure

9.1.1 When more than one employee performs servicing or maintenance of equipment or machinery, a procedure shall be utilized to afford each employee a level of protection equivalent to that provided by personal lockout or tagout.

9.2 Group requirements shall include, but not limited to, the following:

9.2.1 Primary responsibility shall be vested in one authorized employee for a number of employees under a group program with one employee having an operation lock.

9.2.2 The authorized employee must ascertain the exposure level of individual group members.

9.2.3 If more than one group of employees is involved in a job associated assignment, one authorized employee shall be designated to coordinate the affected workers.

9.2.4 Each involved employee shall affix a lockout or tagout device to the group lockout device when beginning work and remove it when work is completed on the machine or equipment being serviced or maintained.

10.0 SHIFT OR PERSONNEL CHANGES

10.1 When a shift or personnel change occurs, a designated employee should ensure the continuity of lockout or tagout protection.

10.2 The designated employee shall provide for the orderly transfer of lockout or tagout devices between off-going and on-coming employees to minimize risk to employees from stored energy.

11.0 EXCLUSIONS

11.1 Normal production operations including repetitive, routine minor adjustments, and adjustment and maintenance which would be covered under OSHA's machine guarding standards

11.2 When working on electrical cords and plugs which are connected to equipment that is unplugged and the employee working on the equipment has complete control of the plug and it remains in his/her site

11.3 Hot tap operations involving gas, steam, water or petroleum products when the employer shows that the continuity of service is essential, shutdown is impractical and documented procedures are followed to provide proven effective protection for employees

12.0 REVIEW

12.1 This entire program will be reviewed on an annual basis by the Safety Director/Operations Manager and upgraded where necessary.

12.2 Any infractions or noncompliance with the program will result in disciplinary action. The action taken will follow company guidelines for noncompliance with other company policies.

LOCKOUT-TAGOUT PROCEDURE

Description:		Manufacturer:		Asset #:
Location:	Serial:	Rev:	Date:	Origin Date:
MAXIMUM # OF LOCKS REQUIRED		CAUTION		
BEFORE SERVICING THIS MACHINE, NOTIFY AFFECTED PERSONNEL				

ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS

ID	SOURCE	LOCATION	METHOD	CHECK

IF LOCKOUT ENERGY CONTROL CANNOT BE PERFORMED / VERIFIED – ***STOP*** AND NOTIFY YOUR SUPERVISOR

DANGER

OPENING A GUARD DOES NOT CONSTITUTE A LOCKOUT

Any machine modification must be shown in procedure. Contact Safety to update procedure.

DANGER

Safety is your Responsibility!

LOCKOUT TAGOUT PROGRAM

Special locks will be used by all persons doing maintenance to powered equipment. These locks will be used whenever safety dictates that power be isolated from the equipment.

A survey was conducted of all equipment at our company for this program. This program will be reviewed annually by the Safety Director and subject to monthly inspection and evaluation by the Safety Director/Operations Manager.

Under no circumstances will any employee remove one of these locks from a piece of de-energized equipment except the person who installed that lock. In his/her absence from the site, the Certified Electrician Subcontractor only may authorize the lock removal after determining it is safe to do so. This procedure is outlined in the written Lockout program.

*** POST PERMANENTLY ON BULLETIN BOARD ***

PERIODIC LOCKOUT INSPECTIONS

Date	Person Evaluated	Equipment being locked	Person performing Evaluation

Electrical Safety 1910.333

(a) "General." Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

(a)(1) "Deenergized parts." Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Live parts that operate at less than 50 volts to ground need not be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Note 1: Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

Note 2: Examples of work that may be performed on or near energized circuit parts because of infeasibility due to equipment design or operational limitations include testing of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

Note 3: Work on or near deenergized parts is covered by paragraph (b) of this section.

(a)(2) "Energized parts." If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. Specific work practice requirements are detailed in paragraph (c) of this section.

(b) "Working on or near exposed deenergized parts."

(b)(1) "Application." This paragraph applies to work on exposed deenergized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged in accordance with paragraph (b) of this section shall be treated as energized parts, and paragraph (c) of this section applies to work on or near them.

(b)(2) "Lockout and Tagging." While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both in accordance with the requirements of this paragraph. The requirements shall be followed in the order in which they are presented (i.e., paragraph (b)(2)(i) first, then paragraph (b)(2)(ii), etc.).

Note 1: As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods.

Note 2: Lockout and tagging procedures that comply with paragraphs (c) through (f) of 1910.147 will also be deemed to comply with paragraph (b)(2) of this section provided that:

[1] The procedures address the electrical safety hazards covered by this Subpart; and

[2] The procedures also incorporate the requirements of paragraphs (b)(2)(iii)(D) and (b)(2)(iv)(B) of this section.

(b)(2)(i) "Procedures." The employer shall maintain a written copy of the procedures outlined in paragraph (b)(2) and shall make it available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.

Note: The written procedures may be in the form of a copy of paragraph (b) of this section.

(b)(2)(ii) "Deenergizing equipment."

(b)(2)(ii)(A) Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment are deenergized.

(b)(2)(ii)(B) The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

(b)(2)(ii)(C) Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

Note: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

(b)(2)(ii)(D) Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

(b)(2)(iii) "Application of locks and tags."

(b)(2)(iii)(A) A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided in paragraphs (b)(2)(iii)(C) and (b)(2)(iii)(E) of this section. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

(b)(2)(iii)(B) Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

(b)(2)(iii)(C) If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

(b)(2)(iii)(D) A tag used without a lock, as permitted by paragraph (b)(2)(iii)(C) of this section, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

(b)(2)(iii)(E) A lock may be placed without a tag only under the following conditions:

(b)(2)(iii)(E)(1) Only one circuit or piece of equipment is deenergized, and

(b)(2)(iii)(E)(2) The lockout period does not extend beyond the work shift, and

(b)(2)(iii)(E)(3) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

(b)(2)(iv) Verification of deenergized condition. The requirements of this paragraph shall be met before any circuits or equipment can be considered and worked as deenergized.

(b)(2)(iv)(A) A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

(b)(2)(iv)(B) A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are deenergized. The test shall also determine

if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately after this test.
(b)(2)(v) "Reenergizing equipment." These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.
(b)(2)(v)(A) A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
(b)(2)(v)(B) Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.
(b)(2)(v)(C) Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that:
(b)(2)(v)(C)(1) The employer ensures that the employee who applied the lock or tag is not available at the workplace, and
(b)(2)(v)(C)(2) The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.
(b)(2)(v)(D) There shall be a visual determination that all employees are clear of the circuits and equipment.
(c) "Working on or near exposed energized parts."
(c)(1) "Application." This paragraph applies to work performed on exposed live parts (involving either direct contact or by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.
(c)(2) "Work on energized equipment." Only qualified persons may work on electric circuit parts or equipment that have not been deenergized under the procedures of paragraph (b) of this section. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.
(c)(3) "Overhead lines." if work is to be performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before work is started. If the lines are to be deenergized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.
Note: The work practices used by qualified persons installing insulating devices on overhead power transmission or distribution lines are covered by 1910.269 of this Part, not by 1910.332 through 1910.335 of this Part. Under paragraph (c)(2) of this section, unqualified persons are prohibited from performing this type of work.
"Unqualified persons."
(c)(3)(i)(A) When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:
(c)(3)(i)(A)(1) For voltages to ground 50kV or below - 10 feet (305 cm);
(c)(3)(i)(A)(2) For voltages to ground over 50kV - 10 feet (305 cm) plus 4 inches (10 cm) for every 10kV over 50kV.
(c)(3)(i)(B) When an unqualified person is working on the ground in the vicinity of overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines than the distances given in paragraph (c)(3)(i)(A) of this section.
Note: For voltages normally encountered with overhead power line, objects which do not have an insulating rating for the voltage involved are considered to be conductive.
(c)(3)(ii) "Qualified persons." When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:
(c)(3)(ii)(A) The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed), or
(c)(3)(ii)(B) The energized part is insulated both from all other conductive objects at a different potential and from the person, or
(c)(3)(ii)(C) The person is insulated from all conductive objects at a potential different from that of the energized part.

TABLE S-5 - APPROACH DISTANCES FOR QUALIFIED EMPLOYEES - ALTERNATING CURRENT

Voltage range (phase to phase)	Minimum approach distance
300V and less	Avoid Contact
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV	1 ft. 6 in. (46 cm).
Over 2kV, not over 15kV	2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV	3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV	4 ft. 6 in. (137 cm).

(c)(3)(iii) "Vehicular and mechanical equipment."
(c)(3)(iii)(A) Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 ft. (305 cm) is maintained. If the voltage is higher than 50kV, the clearance shall be increased 4 in. (10 cm) for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

(c)(3)(iii)(A)(1) If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. (122 cm). If the voltage is higher than 50kV, the clearance shall be increased 4 in. (10 cm) for every 10 kV over that voltage.
(c)(3)(iii)(A)(2) If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.
(c)(3)(iii)(A)(3) If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in Table S-5.
(c)(3)(iii)(B) Employees standing on the ground may not contact the vehicle or mechanical equipment or any of its attachments, unless:
(c)(3)(iii)(B)(1) The employee is using protective equipment rated for the voltage; or
(c)(3)(iii)(B)(2) The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted in paragraph (c)(3)(iii) of this section.
(c)(3)(iii)(C) If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.
(c)(4) "Illumination."
(c)(4)(i) Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.
(c)(4)(ii) Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.
(c)(5) "Confined or enclosed work spaces." When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.
(c)(6) "Conductive materials and equipment." Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, the employer shall institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.
(c)(7) "Portable ladders." Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.
(c)(8) "Conductive apparel." Conductive articles of jewelry and clothing (such a watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.
(c)(9) "Housekeeping duties." Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.
(c)(10) "Interlocks." Only a qualified person following the requirements of paragraph (c) of this section may defeat an electrical safety interlock, and then only temporarily while he or she is working on the equipment. The interlock system shall be returned to its operable condition when this work is completed.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 171 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Lone Worker Safety

Purpose
To ensure the safety of lone workers by identifying potential hazards and risks, providing appropriate training and safety equipment, and establishing communication and emergency response plans.

Scope
This procedure applies to all lone workers, defined as employees who work alone, without direct or immediate supervision.

Responsibilities

- The superintendent is responsible for overseeing the safety of lone workers and ensuring that the procedures outlined in this standard operating procedure are being followed.
- All lone workers are responsible for following the procedures outlined in this standard operating procedure and for reporting any safety concerns or incidents to the superintendent.

Special Definitions

Procedure
1.0 Risk assessment
1.1 Conduct a thorough risk assessment to identify potential hazards and risks associated with the lone worker's job duties, environment, and work schedule.
1.2 Document the risk assessment and review it periodically to ensure it remains relevant and effective.
2.0 Communication plan
2.1 Establish a communication plan that ensures the lone worker can stay in contact with a designated contact person, supervisor, or other appropriate individuals. It should include the following:
2.1.1 Check-ins: Establish a regular check-in schedule with the lone worker to ensure they are safe and to provide an opportunity for them to report any issues or concerns. The frequency and method of check-ins should be based on the level of risk identified in the risk assessment.
2.1.2 Scheduled calls or texts: Schedule regular calls or texts with the lone worker to provide an opportunity for them to report any issues or concerns. The frequency and

method of scheduled communication should be based on the level of risk identified in the risk assessment.

2.1.3 Emergency communication plan: Establish an emergency communication plan that outlines the procedures for contacting the lone worker in case of an emergency, as well as the procedures for the lone worker to follow in case of an emergency. This plan should include emergency contact numbers and any specific instructions or protocols that apply in case of an emergency.

2.1.4 Two-way communication: Ensure that the communication plan allows for two-way communication between the lone worker and the designated contact person, supervisor, or other appropriate individuals. This may include providing the lone worker with a two-way radio or other communication device, or using a phone or other means of communication that allows for two-way communication.

2.1.5 Escalation procedures: Establish clear procedures for escalating communication if the lone worker does not respond to a check-in or scheduled communication, or if there is an emergency that requires immediate attention. These procedures should include identifying who to contact, how to contact them, and any specific instructions or protocols that apply.

2.1.6 Training: Provide the lone worker with training on the communication plan, including how to use any communication devices or systems, and how to follow escalation procedures in case of an emergency or if communication is lost.

2.2 Review and test the communication plan periodically to ensure it remains effective.

3.0 Training

3.1 Provide the lone worker with comprehensive training on the procedures to follow while working alone, including emergency response, first aid, and how to handle potential risks or hazards.

3.2 Document the training and review it periodically to ensure it remains relevant and effective.

4.0 Personal Safety Equipment

4.1 Provide the lone worker with appropriate personal safety equipment, such as a first aid kit, flashlight, high visibility clothing, or any other equipment required to address identified hazards.

4.2 Regularly inspect and maintain the personal safety equipment to ensure it remains in good working condition.

5.0 Emergency response plan

5.1 Develop an emergency response plan that outlines procedures for responding to an emergency situation.

5.2 The emergency response plan should include emergency contact numbers, procedures for evacuating the worksite, and first aid measures.

6.0 Recordkeeping

6.1 Maintain records of lone worker risk assessments, training, communication logs, and any incidents or near misses that occur while working alone.

6.2 Review these records regularly to identify any trends or areas for improvement.

7.0 Review and update

7.1 Regularly review and update the lone worker standard operating procedure to ensure it remains relevant and effective in addressing potential hazards and risks associated with the lone worker's job duties, environment, and work schedule.
7.2 Document all changes made to the standard operating procedure and ensure that all lone workers are informed of any changes.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 159 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Machine Safeguarding Program

Purpose
The purpose of Newkirk Novak's Machine Safeguarding Program is to ensure the safety of our employees by establishing appropriate machine safeguarding procedures for any machine part, function or process that may cause injury.

Scope
This program outlines responsibilities for all Newkirk Novak employees, routine inspections for all machines and required employee training. All employees are required to follow the minimum procedures outlined in this program. Any deviations from this program must be immediately brought to the attention of the Program Administrator.

Responsibilities
Management. Newkirk Novak is responsible for providing equipment and resources necessary to implement this program, and for ensuring that the provisions in this program are being followed by the Program Administrator.

Program Administrator. The Program Administrator is responsible for the following:

Ensuring each department or functional area has a copy of the program

Ensuring that all current and new machinery is inspected for proper machine safeguarding

Developing procedures for taking improperly guarded machines out of service

Ensuring that improperly guarded machines are fixed before being put back into service

Maintaining a machine-specific list of safeguarding methods

Scheduling employee training and ensuring new hires are trained on the program

Providing outside contractors with information on Newkirk Novak's machine safeguarding program

Reviewing and updating the program and materials as needed

Maintaining records pertaining to the program

Supervisors. Supervisors are responsible for:

Document that assigned machine operators are trained on the Machine Safeguarding Program

Stopping and correcting any unsafe work practice or condition immediately

Notifying the Program Administrator when changes in processes increase the risk of injury or introduce a new hazard

Conducting routine machine inspections to ensure there are proper safeguards

Ensuring that employees with insufficient skills or understanding of machine safeguarding are removed and documented retraining is done before returning to machine operations

Ensuring employees comply with all safe work practices outlined in this program

Machine Operators. Machine operators are responsible for:

Completing all required machine safeguarding training before operating a machine

Assisting in inspections

Verifying guarding devices are in place and functional before using any machine

Reporting missing or worn guards to supervisors before operating any machine

Complying with all procedures and safe work practices outlined in this program

Procedure

1.0 MACHINE SAFEGUARDING GUIDELINES

1.1 All Newkirk Novak machines shall be safeguarded to prevent any part of the employee's body or clothing from making contact with a hazardous area. All points of operation, nip points, pinch points, rotating shafts and belts will be guarded. The guards will prevent objects from falling into the equipment. Safeguards must not be easily removed or altered and will be constructed of substantial material that resists fire and corrosion.

1.2 Guards shall not create an additional hazard such as a shear point, contain a jagged edge or have unfinished surfaces. Guards shall be installed so that routine maintenance can be performed without removing the guard.

1.3 Employees shall not use any machine/equipment with a damaged or missing guard until it is repaired or replaced.

2.0 MACHINE INSPECTIONS

2.1 All new equipment and machines shall be inspected by the Program Administrator after setup and before being placed into service. All guards that came standard from the manufacturer must be in place and operational before use. Supervisors and machine operators will visually inspect their machine's safeguards before every shift.

2.2 Each machine shall have a thorough documented inspected prior to every use. Machines that do not pass inspection will be taken out of service. Any machine taken out of service will be isolated from its energy source(s) using the proper isolation method in the Newkirk Novak Lockout/Tagout Program and an "**OUT OF SERVICE"** sign will be promptly attached to the machine.

2.3 After all safeguarding issues found during the inspection are corrected, the Program Administrator will authorize the area's supervisor to put the machine back into service.

3.0 UNAUTHORIZED REMOVAL OF MACHINE SAFEGUARDS

3.1 Management does not tolerate the unauthorized removal of machine safeguards. Any employee found to have removed a machine safeguard without supervisor approval will be subject to disciplinary action.

4.0 EMPLOYEE TRAINING

4.1 All employees who operate machines as part of their job will have documented training on:

- **4.1.1** Identifying the hazards associated with the machines they work with
- **4.1.2** The written procedures for each machine they operate
- **4.1.3** Types of safeguards and how they provide protection from hazards
- **4.1.4** How to use the safeguard
- **4.1.5** How and under what circumstances the safeguarding can be removed
- **4.1.6** What to do if a safeguard is damaged, missing or is not providing adequate protection
- **4.1.7** The types of personal protective equipment (PPE) that should be worn around their assigned machines

5.0 RETRAINING

5.1 Retraining will be conducted for any employee if:

- **5.1.1** There is a change in assignment that involves using a different machine
- **5.1.2** There is a change in the machine, equipment or processes that presents new hazards
- **5.1.3** There is a change in the machine safeguarding procedures
- **5.1.4** The supervisor has reason to believe or determines through inspection or observation that an employee lacks sufficient knowledge of the safeguarding procedures

5.2 All training records will be maintained and retained by the Program Administrator.

6.0 PERIODIC PROGRAM REVIEW

6.1 The Program Administrator will conduct an annual review to assess the program's effectiveness. The review will consider any new machines, changes in processes, facility layout changes and the cost and frequency of machine-related injuries.

6.2 All machine safeguarding procedures and methods will be reviewed annually by the Program Administrator. If any inadequacies are identified, the Program Administrator will take all necessary steps to update the procedure or safeguarding method. The annual review will include a discussion between the Program Administrator and each machine operator to determine if they understand their responsibilities under the Machine Safeguarding Program.

7.0 RECORDS RETENTION

7.1 Newkirk Novak will maintain Machine Safeguarding Program training records for an amount of time determined by the subcontractor. All records will be kept by Program Administrator. Inspection records and machine safeguarding lists will be retained an amount of time determined by the subcontractor.

MACHINERY RISK ASSESSMENT FORM

Machine Type (include model):	**Type of activity:**	**Location of activity:**	
Assessed by:	**Endorsed by:**	**Assessment Date:**	**Review date:**

Description of machinery use (Give sufficient detail so that it is clear as to the range of uses and the environment in which the machinery is used e.g. occupancy, access (slips, obstructions, space), distractions, hot work causing fire to wood dust in close proximity)

Hazard details			
Mechanical Hazards *Examples*	Description and potential for harm	Non-mechanical Hazards (Link to other Risk Assessments) *Examples*	Description and potential for harm
Crushing		Temperature (high or low)	
Shearing		Electrical	
Drawing-in		Noise	
Cutting		Vibration	
Entanglement		Dust	
Impact		Pressure	
Abrasion		Waste	
Stabbing		Fumes	
Puncture		Chemicals	
Ejection		Allergens	

Exposure *(duration/frequency of use) e.g. 10mins/daily, 3 hours/monthly*

Users:
Competency, inexperience, those persons at increased risk of harm (disabled, pregnancy)

Outline the control measures for the use of the machinery i.e. *Engineering controls e.g. guarding: fixed guards, adjustable guards, protections devices e.g. photoelectric or appliances e.g. jigs, pushsticks, holders or markings/warnings, limiting persons in the area.*
Outline the procedural and behavioural control measures for the use of the machinery i.e. PPE, inspection, restrictions, safe systems of work, information, training, instruction, supervision.
Overall assessment of the risk posed by this machine type with existing control measures
Risk Level (Tick)

Low		Medium		High	

Actions required to reduce the risk

Action	By Who	By When	Action Completed

Overall assessment of the risk posed by this machine type with additional control measures
Risk Level (Tick)

Low		Medium		High	

ACTION LEVEL: (To identify what action needs to be taken).

Risk Level:	Action:
Low	No further action required. However, continue to monitor the machinery and work activity.
Medium	Additional actions and controls must be implemented to ensure the machinery can be used safely.
High	Machinery cannot be used until the risk level has been reduced to a satisfactory level. Further controls must be implemented.

MACHINE GUARDING ASSESSMENT

Machine Nomenclature:	Serial Number:	Manufacture Date:
Machine Location:	**Principal Use:**	**Date Machine Installed:**

INITIAL CONSIDERATIONS

1. Can an individual be caught in, on or between two objects?
2. Can an individual be struck by an object?
3. Can an individual strike against a hazardous object?
4. What physical hazards such as heat, cold, line pressures, electrical, chemical and other hazards exist?
5. Identify - The point of operation, nip points, shear points, and other mechanical hazard locations.
6. Think: Over - Under - Around - Through

METHODS OF MACHINE SAFEGUARDING

Indicate: S - Satisfactory I - Needs Improvement/Non Existent (Unsatisfactory) R - Needs Repair (Unsatisfactory)

GUARDS		DEVICES		FEEDING & EJECTION METHODS	
❑ Fixed Guards	❑-S ❑-I ❑-R	❑ Photoelectric Sensing	❑-S ❑-I ❑-R	❑ Automatic Feed	❑-S ❑-I ❑-R
❑ Interlocked Guards	❑-S ❑-I ❑-R	❑ Radio frequency Sensing	❑-S ❑-I ❑-R	❑ Semi-automatic Feed	❑-S ❑-I ❑-R
❑ Adjustable Guards	❑-S ❑-I ❑-R	❑ Electromech. Sensing	❑-S ❑-I ❑-R	❑ Automatic Ejection	❑-S ❑-I ❑-R
❑ Self Adjusting Guards	❑-S ❑-I ❑-R	❑ Pullback System	❑-S ❑-I ❑-R	❑ Semi-automatic Ejection	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Restraint System	❑ S ❑-I ❑-R	❑ Robotic	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Pressure Sens. Body Bar	❑-S ❑-I ❑-R	❑	❑-S ❑ I ❑-R
❑	❑-S ❑-I ❑-R	❑ Safety Triprod	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Safety Tripwire Cable	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Two-hand Control	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Two-hand Trip Control	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Interlocked Gate	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Other Gate ( )	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑ Presence-sensing Mats	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
MISCELLANEOUS AIDS		**LOCATION/DISTANCING.**		**OTHER METHODS**	
❑ Audible Warnings	❑-S ❑-I ❑-R	❑ Control Station Position	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Warning Lights	❑-S ❑-I ❑-R	❑ Enclosure Fences	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Color Coding	❑-S ❑-I ❑-R	❑ Enclosure Walls	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Hand Feeding Tools	❑-S ❑ I ❑-R	❑ Hazard Accessibility	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Awareness Barriers	❑-S ❑-I ❑-R	❑ Hazard Positioning OK	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Holding Fixtures	❑-S ❑-I ❑-R	❑ Machine Positioning	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Protective Shielding	❑-S ❑-I ❑-R	❑ Reach Distances Safe	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Guard Rails	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Mechanical Barriers	❑-S ❑ I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑ Appropriate Signage	❑-S ❑ I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R
❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R	❑	❑-S ❑-I ❑-R

REMARKS CONCERNING EXISTING SAFEGUARDING CONDITIONS

❑-SEE REVERSE

RECOMMENDATIONS FOR IMPROVEMENT, MODIFICATION OR REPAIR

INTERNAL ROUTING

Assessment Date:	**Forwarded To:**	**Date Received:**
	Forwarded To:	**Date Received:**
	Forwarded To:	**Date Received:**
Assessors Name:	**Title:**	**Work phone**

Safeguarding Requirement:	**Responsible Person/Phone:**	**Estimated Completion Date:**
Notes:		
	❑ **Completed**	**Date:**
Safeguarding Requirement:	**Responsible Person/Phone:**	**Estimated Completion Date:**
Notes:		
	❑ **Completed**	**Date:**
Safeguarding Requirement:	**Responsible Person/Phone:**	**Estimated Completion Date:**
Notes:		
	❑ **Completed**	**Date:**
Safeguarding Requirement:	**Responsible Person/Phone:**	**Estimated Completion Date:**
Notes:		
	❑ **Completed**	**Date:**
Safeguarding Requirement:	**Responsible Person/Phone:**	**Estimated Completion Date:**
Notes:		
	❑ **Completed**	**Date:**

Additional Comments/Requirements:

REVIEWERS ACTIONS

❑ All Actions Completed	Diagrams/Drawings Attached ❑ Yes ❑ No	Continued On Attachment ❑ Yes ❑ No
Date:	Phone:	Recommend Further Review ❑ Yes ❑ No
Reviewer's Name:	Signature:	

ASSESSMENT FORM RETENTION INFORMATION

Permanent Retention File:	**Location:**	
Date Filed:	**Filed By:**	**Initials:**

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 133 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Night Work Safety (non-roadway applications)

Purpose
The following night work safety program has been developed to protect employees from the hazards found by working at nights. These hazards can be classified as physiological hazards and physical hazards.

Scope
This program applies to all personnel that work at night.

Responsibilities

Special Definitions
Night work is defined as thirty minutes before sunset and thirty minutes after sunrise

Procedure
1.0 ILLUMINATION
- **1.1** All work areas will be illuminated with at least 5 foot-candles or 50 lux of illumination.
- **1.2** Particular concern will be provided around changes in elevation, such as trenches, ditches; and construction vehicle traffic.
- **1.3** In special situations where it is not practical to provide general illumination, portable light carts or head mounted lights shall be used.
- **1.4** Placement of lighting shall not create glare or blind spots that would increase hazards on the job

2.0 PPE
- **2.1** All employees will wear clothing with reflective materials on all sides.
- **2.2** Reflective clothing will always be worn as the last layer of clothing (over top coats, jackets, etc)
- **2.3** Any glasses, prescription or not, for general use shall not be tinted during night work.

3.0 VEHICLES
- **3.1** All vehicles used at nights will have working headlamps

4.0 PHYSIOLOGICAL CONTROLS
- **4.1** Night employees will be encouraged to:
  - **4.1.1** Sleep and eat well before their shifts
  - **4.1.2** Provide time to wind down from work before going to sleep

4.1.3 Have sleep-preparation rituals to promote good sleep hygiene
4.1.4 Block out noise and light while sleeping with a sleep-mask, black-out curtains, ear-plugs or a white noise machine
4.1.5 Avoid using intoxicants or sleeping pills to get to sleep
4.1.6 Avoid excessive reliance on caffeine
4.1.7 On the first day off, encourage employees and managers to try to get on their family's cycle as soon as possible
4.1.8 Make time for regular exercise
4.1.9 Think about safety at home and at work more often and more comprehensively; near misses become real accidents and injuries
4.1.10 Make sure to be awake enough to drive home safely without falling asleep at the wheel

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 121 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Reporting Fatalities & Multiple Injuries

Purpose
Necessary action to take if multiple injuries or death should occur at the facility or work site

Scope
All Management personnel

Responsibilities
See Procedure section for Responsibilities

Special Definitions

Procedure

1.0 Within 8 hours after any work related fatality the employer must report by phone to the nearest OSHA Area Director during normal business hours or by calling the 24-hour OSHA hotline at 1-800-321-6742. Any work related inpatient hospitalization, amputation, or eye loss must be reported within 24 hours of learning about it to the nearest OSHA Area Director during normal business hours. Prior to making this call, the Operations Manager shall notify the Company Safety Director.

2.0 The employer shall complete this report within eight (8) hours of the time the incident is reported to any agent or employee of the company.

3.0 The following information will be furnished to OSHA during the reporting telephone call:
- **3.1** Name of Company
- **3.2** Location of Incident
- **3.3** Date and Time of Incident
- **3.4** Name of Employee(s) Injured
- **3.5** Name and Phone Number of Company Contact
- **3.6** Brief Description of Accident

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 154 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Pandemic Preparedness Program

Purpose
In the event of a pandemic, employers will play a key role in protecting employees' health and safety as well as in limiting the impact on the economy and society. Employers will likely experience employee absences, changes in patterns of commerce and interrupted supply and delivery schedules. Proper planning will allow employers in the public and private sectors to better protect their employees and lessen the impact of a pandemic on society and the economy.

Scope
Pandemic planning should be based upon traditional infection control and industrial hygiene practices. If there is a pandemic or any viral strain, proper planning is crucial. Additional information may be needed if an actual pandemic unfolds and more is known about the characteristics of the virulence of the virus, disease transmissibility, clinical manifestation, drug susceptibility, and risks to different age groups and subpopulations. Employers and employees alike should work together to identify risk levels in workplace settings and appropriate control measures that include good hygiene, cough etiquette, social distancing, the use of personal protective equipment, and staying home from work when ill.

Responsibilities
It is the responsibility of the company president or identified representative to ensure the program is followed and that all information is distributed to employees.

Special Definitions
SEASONAL INFLUENZA – refers to the periodic outbreaks of respiratory illness in the fall and winter in the United States. Outbreaks are typically limited; most people have some immunity to the circulating strain of the virus. A vaccine is prepared in advance of the seasonal influenza; it is designed to match the influenza viruses most likely to be circulating in the community. Employees living abroad and international business travelers should note that other geographic areas (for example, the Southern Hemisphere) have different influenza seasons which may require different vaccines. Each year, in the United States, on average 36,000 people die from flu-related complications and more than 200,000 people are hospitalized from flu-related causes. Of those hospitalized, 20,000 are children younger than 5 years old. Over 90% of deaths and about 60 percent of hospitalization occur in people older than 65.

PANDEMIC INFLUENZA – refers to a worldwide outbreak of influenza among people when a new strain of the virus emerges that has the ability to infect humans and to spread from person to person. During the early phases of an influenza pandemic, people might not have any natural

immunity to the new strain; so the disease would spread rapidly among the population. A vaccine to protect people against illness form a pandemic influenza virus may not be widely available until many months after an influenza pandemic begins. Pandemics can vary in severity from something that seems simply like a bad flu season to an especially severe influenza pandemic that could lead to high levels of illness, death, social disruption and economic loss. It is impossible to predict when the next pandemic will occur or whether it will be mild or severe.

AVIAN INFLUENZA (AI) – also known as the bird flu – is caused by a virus that infects wild birds and domestic poultry. Some forms of the avian influenza are worse than others. Avian influenza viruses are generally divided into two groups; low pathogenic influenza and highly pathogenic avian influenza. Low pathogenic avian influenza naturally occurs in wild birds and can spread to domestic birds. In most cases, it causes no signs of infection or only minor symptoms in birds. In general, these low path strains of the virus pose little threat to human health. Low pathogenic avian influenza virus H5 and H7 strains have the potential to mutate into highly pathogenic avian influenza and are, therefore, closely monitored. Highly pathogenic avian influenza spreads rapidly and has a high death rate in birds. Highly pathogenic avian influenza of the H5N1 strain is rapidly spreading in birds in some parts of the world.

> Highly pathogenic H5N1 is one of the few avian influenza viruses to have crossed the species barrier to infect humans and it is the most deadly of those that have crossed the barrier. Most cases of H5N1 influenza infection in humans have resulted from contact with infected poultry or surfaces contaminated with secretions / excretions from infected birds.
>
> As of February 2007, the spread of H5N1 virus from person to person has been limited to rare, sporadic cases. Nonetheless, because all influenza viruses have the ability to change, scientists are concerned that H5N1 virus one day could be able to sustain human to human transmission. Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human population. If H5N1 virus were to gain the capacity to sustain transmission from person to person, a pandemic could begin.

INFLUENZA A (H1N1) – also known as the swine flu – is spreading from person-to-person worldwide, probably in much the same way that regular seasonal influenza viruses spread. On June 11, 2009, the World Health Organization (WHO) signaled that a pandemic of novel H1N1 flu was underway.

> This virus was originally referred to as “swine flu” because laboratory testing showed that many of the genes in this new virus were very similar to influenza viruses that normally occur in pigs (swine) in North America. But further study has shown that this new virus is very different from what normally circulates in North American pigs. It has two genes from flu viruses that normally circulate in pigs in Europe and Asia and bird (avian) genes and human genes. Scientists call this a "quadruple reassortant" virus.
>
> The symptoms of novel H1N1 flu virus in people include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue. A significant number of people who have been infected with this virus also have reported diarrhea and vomiting. Illness with the new H1N1 virus has ranged from mild to severe. While most people who have been sick

have recovered without needing medical treatment, hospitalizations and deaths from infection with this virus have occurred.

People infected with seasonal and novel H1N1 flu shed virus and may be able to infect others from 1 day before getting sick to 5 to 7 days after. This can be longer in some people, especially children and people with weakened immune systems and in people infected with the new H1N1 virus.

PANDEMIC CORONAVIRUS (COVID-19) – refers to a worldwide outbreak among people when a new strain of a virus emerges that has the ability to infect humans and to spread from person to person. During the early phases of a pandemic, people might not have any natural immunity to the new strain, so the disease spreads rapidly among the population. A vaccine to protect people against illness from a pandemic virus may not be widely available until many months after the pandemic begins. Coronavirus affects different people in different ways. Most infected people will develop mild to moderate symptoms.

Common symptoms:
fever
tiredness
dry cough
Some people may experience:
aches and pains
nasal congestion
runny nose
sore throat
diarrhea.

On average it takes 5–6 days from when someone is infected with the virus for symptoms to show, however it can take up to 14 days.

Procedure

1.0 HOW A SEVERE PANDEMIC COULD AFFECT WORKPLACES

1.1 Unlike natural disasters or terrorist events, a pandemic will be widespread, affecting multiple areas of the US at the same time. A pandemic will also be an extended event, with multiple waves of outbreaks in the same geographic area; each outbreak could last from 6 to 8 weeks. Waves of outbreaks may occur over a year or more. Your workplace will likely experience:

1.1.1 Absenteeism – a pandemic could affect as much as 40 percent of the workforce during peak periods of the illness. Employees could be absent because they are sick, must care for sick family members or for children if schools or day care centers are closed, are afraid to come to work, or the employer might not be notified that the employee has died.

1.1.2 Change in patterns of commerce – during a pandemic, consumer demand for items related to infection control is likely to increase dramatically, while consumer interest in other goods may decline.

1.1.3 Interrupted supply / delivery – shipments of items from those geographic areas severely affected by the pandemic may be delayed or cancelled.

1.2 To reduce the impact of a pandemic on your operations, employees, customers and the general public, it is important for all businesses and organizations to begin continuity planning for a pandemic immediately. Lack of continuity planning can result in a cascade of failures as employers attempt to address challenges of a pandemic with insufficient resources and employees who might not be adequately trained in the jobs they will be asked to perform. Proper planning will allow employers to better protect their employees and prepare for changing patterns of commerce and potential disruptions in supplies and or services.

2.0 HOW A VIRUS CAN SPREAD BETWEEN PEOPLE

2.1 A virus is thought to be primarily spread through large droplets (airborne transmission) that directly contact the nose, mouth or eyes. These droplets are produced when infected people cough, sneeze or talk, sending the relatively large infectious droplets and very small sprays (aerosol like) into the nearby air and into contact with other people. Large droplets can only travel a limited range; therefore, people should limit close contact (less than 6 feet) with others when possible. To a lesser degree, human influenza is spread by touching objects contaminated with influenza viruses and then transferring the infected material from the hands to the nose, mouth or eyes. Influenza may also be spread by very small infectious particles (aerosol like) traveling in the air. The contribution of each route of exposure to influenza transmission is uncertain at this time and may vary based upon the characteristics of the influenza strain.

3.0 CLASSIFYING EMPLOYEE EXPOSURE TO PANDEMIC AT WORK

3.1 Employees' risks of occupational exposure to a virus during a pandemic may vary from very high to high, medium, or lower risk. The level of risk depends in part on whether or not jobs require close proximity to people potentially infected with the pandemic virus, or whether they are required to have either repeated or extended contact with known or suspected sources of pandemic virus such as coworkers, the general public, outpatients, school children or other such individuals or groups.

3.2 After a review of your workplace exposure potential, it has been determined that your employee exposure classification at this time is **Lower Risk (Caution)**. This classification is for occupations that do not require contact with people known to be infected with the pandemic virus, nor frequent close contact (within 6 feet) with the public. Even at lower risk levels, however, employers should be cautious and develop preparedness plans to minimize employee infections. A part of this preparedness plan should include operating with a reduced workforce, engineering controls or personal protective equipment to reduce exposure and identification of business essential positions to do cross training on now.

4.0 PROTECTING YOUR EMPLOYEES

4.1 If your workplace does not require employees to have frequent contact with the general public, basic personal hygiene practices and social distancing can help protect employees at work. Follow the general hygiene and social distancing practices recommended for all workplaces. Also, try the following:

4.1.1 Communicate to employees what options may be available to them for working from home.

4.1.2 Communicate the office leave policies, policies for getting paid, transportation issues, and day care concerns.

4.1.3 Make sure that your employees know where supplies for hand hygiene are located.

4.1.4 Monitor public health communications about pandemic virus recommendations and ensure that your employees also have access to that information.

4.1.5 Work with your employees to designate a person(s), website, bulletin board or other means of communicating important pandemic virus information.

4.2 Proper Hygiene

4.2.1 Encourage your employees to wash their hands frequently with soap and water or with hand sanitizer if there is no soap or water available. Also, encourage your employees to avoid touching their noses, mouths, and eyes.

4.2.2 Encourage your employees to cover their coughs and sneezes with a tissue, or to cough and sneeze into their upper sleeves if tissues are not available. All employees should wash their hands or use a hand sanitizer after they cough, sneeze or blow their noses. Provide customers and the public with tissues and trash receptacles, and with a place to wash or disinfect their hands.

4.2.3 Keep work surfaces, telephones, computer equipment and other frequently touched surfaces and office equipment clean. Be sure that any cleaner used is safe and will not harm your employees or your office equipment. Use only disinfectants registered by the U.S. Environmental Protection Agency (EPA), and follow all directions and safety precautions indicated on the label. Studies have shown that influenza virus can survive on environmental surfaces and can infect a person for 2 to 8 hours after being deposited on the surface. Some viruses can survive longer on surfaces.

4.3 Social Distancing

4.3.1 Avoid or minimize time spend in crowded settings and other situations that increase the risk of exposure.

4.3.2 Encourage sick employees to stay at home.

4.3.3 Employees should avoid close contact with their coworkers and customers (maintain a separation of at least 6 feet). They should avoid shaking hands and always wash their hands after contact with others. Even if employees wear gloves, they should wash their hands upon removal of the gloves in case their hand(s) became contaminated during the removal process. Discourage your employees from using other employees' phones, desks, offices or other work tools and equipment.

4.3.4 Minimize situations where groups of people are crowded together, such as in a meeting. Use e-mail, phones and text messages to communicate with each other. When meetings are necessary, avoid close contact by keeping a separation of at least 6 feet, where possible, and assure that there is proper ventilation in the meeting room.

4.3.5 Reducing or eliminating unnecessary social interactions can be very effective in controlling the spread of infectious diseases. Reconsider all situations that permit or require employees, customers, and visitors (including family members) to enter the workplace. Workplaces which permit family visitors on site should consider

restricting/eliminating that option during a pandemic. Work sites with on-site day care should consider in advance whether these facilities will remain open or will be closed, and the impact of such decisions on employees and the business.

5.0 ADDITIONAL CONSIDERATIONS FOR HIGHER RISK CLASSIFICATIONS

5.1 Engineering Controls

5.1.1 Installing physical barriers, such as clear plastic sneeze guards

5.1.2 Negative pressure ventilation

5.2 Administrative Controls

5.2.1 Developing policies that encourage employees to stay at home without fear of any reprisals. If you are sick with flu-like illness, CDC recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. (Your fever should be gone without the use of a fever-reducing medicine.)

5.2.2 Discontinuing unessential travel to locations with high illness transmission rates.

5.2.3 Implement practices to minimize face-to-face contact between employees such as e-mail and teleconferences. Where possible, encourage flexible work arrangements to reduce the number of your employees who must be at work at one time or in one specific location. Encouraging social distancing between employees and work areas where feasible.

5.2.4 Implement emergency communications plans. Develop internet based communications if feasible.

5.3 Work Practices

5.3.1 Provide resources and a work environment that promotes personal hygiene. Provide tissues, no-touch trash cans, hand soap, hand sanitizer, disinfectants and disposable towels for employees to clean their work surfaces. All work surfaces should be clean daily with a bleach/water solution. The solution must sit for 10 minutes to ensure it is effective.

5.3.2 Encouraging employees to obtain a seasonal influenza vaccine (this helps to prevent illness from seasonal influenza strains that may continue to circulate).

5.3.3 Providing employees with up-to-date education and training on influenza and virus risk factors, protective behaviors, and instruction on proper behaviors (for example, cough etiquette and care of personal protective equipment).

5.3.4 Developing policies to minimize contact between employees and clients and customers.

5.3.5 Employees who are well but who have an ill family member at home with novel H1N1 flu can go to work as usual. Employees with family members with COVID 19 should self-quarantine for a minimum of two weeks. These employees should monitor their health every day, and take everyday precautions including washing their hands often with soap and water, especially after they cough or sneeze. Alcohol-based hand cleaners are also effective.* If they become ill, they should notify their supervisor and stay home.

5.4 Personal Protective Equipment

5.4.1 Personal protective equipment must be selected based upon the hazard to the employee.

5.4.2 It must be properly fitted and respirators have additional medical and fit testing requirements.

5.4.3 PPE must be conscientiously and properly worn to be effective.

5.4.4 PPE must be regularly maintained and replaced as necessary.

5.4.5 Contaminated PPE must be properly removed and properly disposed of to avoid contamination of yourself or others.

5.4.6 Some examples of PPE are listed below:

- **5.4.6.1** Gloves
- **5.4.6.2** Goggles
- **5.4.6.3** Face Shields
- **5.4.6.4** Surgical masks
- **5.4.6.5** Respirators with N-95 filters

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 122 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Personal Protective Equipment

Purpose
The purpose of this program is to establish procedures for the use of personal protective equipment at the facility and/or jobsites.

It is the policy that our personnel fully comply with the U.S. Department of Labor's Office of Occupational Safety and Health's Personal Protective Equipment Standards. This policy is necessary because of our concern for the health and safety of our employees.

Scope
This document applies to all employees required to wear personal protective equipment.

Responsibilities
The Superintendent is responsible for:

Issuing and administering this program and making sure that it satisfies all applicable requirements

Identifying hazards to the eyes, head, hands, feet; and identifying appropriate PPE

Ensuring that employees receive training on PPE use and application

Maintaining training records for all employees included in the training sessions.

Maintaining a chart that indicates what kind of PPE to be worn and where it shall be worn.

The Superintendent is responsible for:

Knowing the hazards in the areas that require PPE

Assuring that safe operations are maintained to prevent injuries to the eyes, face, heads, hands, and feet

Enforcing PPE use in the areas in which it is required

Employees are responsible for:

Using PPE when required

Properly maintaining PPE

Notifying their Superintendent of defective PPE

Special Definitions

Procedure

1.0 GENERAL

- **1.1** Hard hats, safety glasses, boots, high visibility shirts shall be worn at all times on jobsites.
- **1.2** Employees are required to use additional PPE wherever hazards exist.
- **1.3** PPE will be replaced when damaged or worn out. With the exception of equipment that can have a useful purpose off the job, all personal protective equipment shall be provided to the employee by the company.
- **1.4** All safety glasses will be equipped with side shields.

2.0 SAFETY SHOES

- **2.1** Employees who work in areas that may contain hazards of falling or rolling objects are required to wear safety toed footwear.
- **2.2** Safety shoes must meet ANSI Z41-1991 standard.

3.0 GLOVES

- **3.1** Employees who work in areas that contain hand hazards are required to wear appropriate gloves.
- **3.2** Only gloves that are provided by the company or approved by the company are to be worn.
- **3.3** Caution is to be observed while wearing gloves around moving equipment

4.0 HEAD PROTECTION

- **4.1** Employees are required to wear hard hats.
- **4.2** Hard hats are required to meet ANSI Z89.1-1986.

Personal Protective Equipment Assessment Form

Facility:	Assessor:
Department:	Position:
Task or Job Function:	Date of Assessment:

Section 1. Hazards (check appropriate box)	Yes	No	Section 2 Describe Specific Hazards	Section 3. Identify type of PPE required for hazards identified
Eye and Face				
Impact				
Penetration				
Chemical				
Burns(thermal)				
Light				
Other				

Section 1. Hazards (check appropriate box)	Yes	No	Section 2 Describe Specific Hazards	Section 3. Identify type of PPE required for hazards identified
Head				
Impact				
Penetration				
Shock				
Other				

Section 1. Hazards (check appropriate box)	Yes	No	Section 2 Describe Specific Hazards	Section 3. Identify type of PPE required for hazards identified
Foot				
Impact				
Penetration				
Chemical				
Heat				
Compression				
Other				

Section 1. Hazards (check appropriate box)	Yes	No	Section 2 Describe Specific Hazards	Section 3. Identify type of PPE required for hazards identified
Hand Hazard				
Impact				
Penetration				
Chemical				
Heat				
Light				
other				

Appendix

1. CONTROLLING HAZARDS.

PPE devices alone will not be relied on to provide protection against hazards, but will be used in conjunction with guards, engineering controls, and sound manufacturing practices.

2. ASSESSMENT AND SELECTION.

It is necessary to consider certain general guidelines for assessing the foot, head, eye, face, and hand hazard situations that exist in an occupational or educational operation or process, and to match the protective devices to the particular hazard. It should be the responsibility of the safety officer to exercise common sense and appropriate expertise to accomplish these tasks.

3. ASSESSMENT GUIDELINES.

In order to assess the need or PPE the following steps will be taken:

A. Survey. Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

(a) Impact
(b) Penetration
(c) Compression (roll-over)
(d) Chemical
(e) Heat
(f) Harmful dust
(g) Light (optical) radiation

B. Sources. During the walk through survey the safety officer should observe:

(a) Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;
(b) Sources of high temperatures that could result in burns, eye injury or ignition or protective equipment, etc;
(c) Types of chemical exposures;
(d) Sources of harmful dust;
(e) Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc;
(f) Sources of falling objects or potential for dropping objects;
(g) Sources of sharp objects, which might pierce the feet or cut the hands;
(h) Sources of rolling or pinching objects, which could crush the feet;
(i) Layout of workplace and location of co-workers
(j) Electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas.

C. Organizing data. Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

D. **Analyze data**. Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards (paragraph 3.a.) should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

4. SELECTION GUIDELINES.

After completion of the procedures in paragraph 3, the general procedure for selection of protective equipment is to:

A. Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc;

B. Compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment;

C. Select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and

D. Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

5. FITTING THE DEVICE.

Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.

6. DEVICES WITH ADJUSTABLE FEATURES.

Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care should be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. Where manufacturer's instructions are available, they should be followed carefully.

7. REASSESSMENT OF HAZARDS.

It is the responsibility of the safety officer to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.

8. SELECTION CHART GUIDELINES FOR EYE AND FACE PROTECTION.

The following chart provides general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard "source" operations.

Eye and Face Protection Selection Chart

SOURCE	ASSESSMENT OF HAZARDS	PROTECTION
IMPACT-chipping, grinding machining, masonry work, woodworking, sawing, chiseling, power fasting, riveting, and sanding.	Flying fragments, objects, large chips, particles sand, dirt, etc.	Spectacles with side protection, goggles, face shields. See notes (1), (3), (5), (6), (10). For severe exposure, use face shield.
HEAT-Furnace operations, pouring, casting, hot dipping, and welding.	Hot sparks	Face shields, goggles, spectacles with side protection. For severe exposure use face shield. See notes (1), (2), (3).
	Splash from molten metals	Face shields worn over goggles. See notes (1), (2), (3).
	High temperature exposure	Screen face shields, reflective face shields. See notes (1), (2), (3).
CHEMICALS-acid and chemical handling, degreasing plating	Splash	Goggles, eyecup and cover types For severe exposure, use face shield. See notes (3), (11).
	Irritating mists	Special purpose goggles
DUST-woodworking, buffing, general dusty conditions	Nuisance dust	Goggles, eyecup and cover types. See note (8).
LIGHT and/or **RADIATION**- Welding: Electric Arc	Optical radiation	Welding helmets or welding shields. Typical shades: 10-14. See notes (9) (12).
Welding: Gas	Optical radiation	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4. See note (9).
Cutting, Torch brazing, Torch soldering	Optical radiation	Spectacles or welding face shields. Typical shades 1.5-3. See notes (3) (9).
Glare	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable. See notes (9) (10).

Notes to Eye and Face Protection Selection Chart:

(1) Care should be taken to recognize the possibility of multiple and simultaneously variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.

(2) Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.

(3) Face shields should only be worn over primary eye protections (spectacles or goggles).

(4) As required by the standard, filter lenses must meet the requirements for shade designations in 1910.133 (a) (5). Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.

(5) As required by the standard, persons whose vision requires the use of prescription (RX) lenses must wear either protective devices fitted with prescription (RX) lenses or protective devices designed to be worn over regular prescription (RX) eyewear.

(6) Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments might represent an additional hazard to contact lens wearers.

(7) Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.

(8) Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.

(9) Welding helmets or face shields should be used only over primary eye protection (spectacles or goggles).

(10) Non-sideshield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for "impact."

(11) Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.

(12) Protection from light radiation is directly related to filter lens density. See note (4). Select the darkest shade that allows task performance.

9. SELECTION GUIDELINES FOR HEAD PROTECTION.

All head protection (helmets) is designed to provide protection from impact and penetration hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provide electrical protection form high-voltage conductors (they are proof tested to 20,000 volts). Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Where falling object hazards are present, helmets must be worn. Some examples include: working below other workers who are using tools and materials which could fall;

working around or under conveyor belts which are carrying parts or materials; working below machinery or processes which might cause material or objects to fall; and working on exposed energized conductors.

10. SELECTION GUIDELINES FOR FOOT PROTECTION.

Safety shoes and boots which meet the ANSI A41-1991 Standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided, and in other special situations electrical conductive or insulating safety shoes would be appropriate.

Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and, for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection would be required for work activities involving skid trucks (manual material handling carts) around bulk rolls) and around heavy pipes, all of which could potentially roll over an employee's feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees causing a foot injury.

11. SELECTION GUIDELINES FOR HAND PROTECTION.

Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systematic effects following dermal exposure. No gloves will provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for the particular application and determine how long it can be worn, and whether it can be reused.

It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. These performance characteristics should be assessed by using standard test procedures. Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated.

Other factors to be considered for glove selection in general include:

(A) As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types.

(B) The work activities of the employee should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.

With respect to selection of gloves for protection against chemical hazards:

(A) The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;

(B) Generally, any "chemical resistant" glove can be used for dry powders;

(C) For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials.

(D) Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

12. CLEANING AND MAINTENANCE.

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision.

For the purposes of compliance with 1910.132 (a) and (b), PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection.

It is also important to ensure that the contaminated PPE, which cannot be decontaminated, is disposed of in a manner that protects employees from exposure to hazards.

PERSONAL PROTECTIVE EQUIPMENT
HAZARD ASSESSMENT CERTIFICATION
29 CFR 1910.132 (d)

Workplace evaluated:_____

Date(s) of evaluation:_____

Name of person conducting evaluation:_____

Title of person conducting evaluation:_____

I certify that on the above stated date(s), I performed a hazard assessment of the stated workplace to determine hazards which necessitate the use of personal protective equipment pursuant to the Occupational Safety and Health Administration's rule at 29 CFR 1910.132 (d) and that such assessment was consistent with the guidelines in Appendix "B" to Subpart "I".

Signature of person performing certification:_____

Date of certification:_____

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 115 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Powered Industrial Truck - Construction

Purpose
To train and certify employees in the safe operating practices, procedures and requirements of proper and acceptable operation of forklifts

Scope
This program covers safe operation of all powered industrial trucks (forklifts).

Responsibilities
The Subcontractor shall be responsible for establishment and implementation of the program.

Special Definitions

Procedure
1.0 ESTABLISH A WRITTEN PROGRAM

- **1.1** The Subcontractor will conduct a survey of our employee's job requirements to determine their need for forklift training.
- **1.2** The Subcontractor will designate those employees who will be authorized to operate forklifts after completing the required training and certification.
- **1.3** The Subcontractor will be notified of the need for training and a class will be scheduled at the earliest possible date.
- **1.4** Training, testing, and monitoring of employees designated by the Subcontractor to operate forklifts shall comply with OSHA regulations.
- **1.5** Personnel suspected of substance abuse will not be selected for this program.
- **1.6** A training log, designating those persons authorized and trained to operate forklifts at this facility, shall be maintained.

2.0 LICENSING/CERTIFICATION

- **2.1** Employee(s) will be trained on the safe operation and characteristics of the Forklift. Employee(s) shall not be authorized/permitted to operate any Forklift, at the job site, unless he/she is first trained on that vehicle's safe operation.
- **2.2** A license to operate a Forklift at our facility may be revoked at any time for an infraction of the safe handling rules for forklifts.
- **2.3** The license shall be considered valid for a period of three (3) years.

3.0 TRAINING

- **3.1** The Subcontractor shall ensure training is provided as needed.
- **3.2** Training shall consist of both lecture and practical training consisting of:

3.2.1 Lecture, discussion, or video tape presentation and written materials
3.2.2 Demonstration of each Forklift
3.2.3 Hands-on practical experience exercises by trainee
3.2.4 Culminating in a written test and a written evaluation of trainee(s) performance

4.0 REVIEW

4.1 A review of each Forklift covering:
- **4.1.1** Operating instructions of each vehicle listed
- **4.1.2** Applicable warnings and precautions specific to each vehicle listed
- **4.1.3** Identifying the different types of Forklifts
- **4.1.4** Outlining the differences between a Forklift and an automobile
- **4.1.5** Operations and purpose of Forklift controls and instrumentation covering their locations, what they do and how they work, and the inherent stability of each individual vehicle
- **4.1.6** Engine and motor operation of each Forklift, specifically identifying differences and characteristics of (1) - LP Gas, (2) - Gasoline, (3) - Diesel, and (4) - electric power
- **4.1.7** Steering and maneuvering systems specific to the Forklifts
- **4.1.8** Operating limitations of each Forklift
- **4.1.9** Composition of loads such as:
  - **4.1.9.1** Types of loads
  - **4.1.9.2** Stability of load and material(s)
- **4.1.10** Material:
  - **4.1.10.1** Manipulation
  - **4.1.10.2** Stacking
  - **4.1.10.3** Unstacking
- **4.1.11** Inside operation of the Forklift:
  - **4.1.11.1** Ventilation
  - **4.1.11.2** Maintenance (combustion & etc)
  - **4.1.11.3** Carbon Monoxide
- **4.1.12** Surfaces within and specific to the job site

5.0 DISCUSSION TOPICS

5.1 Only trucks approved for the atmosphere shall be used in areas designated as hazardous.
5.2 Forks and attachment systems, safety, operation and limitations and guards
5.3 Refueling of Forklifts whether (1) - LP, (2) - Gasoline, (3) - Diesel, (4) - Electric, fuel handling will only be accomplished with a fire extinguisher readily available and the truck's engine shut off.
5.4 Batteries will only be charged in an approved battery charging area.
5.5 Acid will be poured into water, not water into acid when charging or maintaining batteries.
5.6 The truck shall be properly positioned and brakes set when changing batteries.
5.7 Smoking in the battery charging area shall be prohibited.
5.8 Keep tools or other metal objects away from the posts on the battery.
5.9 The truck shall be inspected at the beginning of each shift for mechanical defects and malfunctioning safety equipment.
5.10 Trucks shall not be driven toward another employee.

5.11 No employee will pass under the elevated load or forks.
5.12 Only licensed drivers shall operate forklifts.
5.13 Trucks not designed for seating nor factory installed seating shall carry a passenger.
5.14 Arms and/or legs will not be permitted outside the running lines of the truck.
5.15 When leaving the forklift unattended, the forks will be lowered to ground/floor, gear placed in neutral, power shut off, and the brakes set.
5.16 The truck shall not be used to open doors or operate close to the edge of platforms.
5.17 Operators shall be alert to low ceiling and piping.
5.18 Personnel will not be elevated on the forks unless they are inside an approved lifting carriage secured to the forks.
5.19 Speed limits will be observed and a safe distance maintained between vehicles.
5.20 Trucks traveling the same direction shall not pass.
5.21 The driver is required to slow down at intersections and sound the horn if his/her vision is obstructed.
5.22 Cross railroad tracks diagonally.
5.23 Grades shall be ascended or descended slowly.
5.24 Stunt driving or horseplay will not be permitted.
5.25 Each Forklift shall handle only safe and stable loads. Overloading is prohibited. Individual vehicle capacity is identified on the vehicle identification tag.
5.26 Safe load handling and operational characteristic in reduced visibility load handling situations including emergency situations
5.27 Any truck found to be in need of repair, defective, or in any way unsafe shall be immediately removed from service.

6.0 INSPECTION

6.1 The operator shall inspect the truck for safety and operational conditions and all safety guard(s) shall be on and operational at the beginning of the shift.

7.0 REFRESHER TRAINING

7.1 Each employee, certified as a Forklift Operator, shall be retrained in a refresher course once every three (3) years, or as follows:
7.2 When an operator has been observed operating his/her Forklift in an unsafe or hazardous manner
7.3 When an operator has been involved in an accident or near-miss incident
7.4 When an operator has been assigned to a different Forklift he/she has not been trained and certified to operate
7.5 When the workplace environment changes dictate
7.6 A Forklift Operator may be subject to an "Operator Evaluation" at any time based upon complaint(s) of unsafe truck operation.

8.0 REVIEW

8.1 This program will be reviewed annually and updated as necessary by the Operations Manager.

Listing of Powered Industrial Trucks at our facility on _____

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

FORKLIFT

Daily Inspection Form
(Gasoline, L.P.G. or Diesel)

MAKE: _____ MODEL: _____ YEAR: ____ TRUCK #: _____SERIAL NUMBER: _____ DEPARTMENT: _____

Date	Meter Reading		Visual Inspection Checks						Operational			Description of Service Work Performed
	Start	End	Fuel	Coolant	Engine Oil	Tires	Lights	Gauges	Hydraulic Leaks	Horn	Steering	Brakes
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
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21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												

MONTH OF: _____, Year: _____

____ Means "OK". _____ Means "Needs Service". PM - Means "Planned Maintenance". A - Means "Adjustment". R - Means "Repairs".

ELECTRIC FORKLIFT

Daily Inspection Form

MAKE: _____ MODEL: _____ YEAR: ____ TRUCK #: _____SERIAL NUMBER: _____ DEPARTMENT: _____

Date	Meter Reading	Visual Inspection Checks						Operational			Description of Service Work Performed
	No. of Hours	Battery	Cables	Wheels	Lights	Gauges	Hydraulic Leaks	Horn	Steering	Brakes	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
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21											
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25											
26											
27											
28											
29											
30											
31											

MONTH OF: _____, Year: _____

OK - "OK" NS - "Needs Service". PM - "Planned Maintenance". A - "Adjustment". R - "Repairs".

Powered Industrial Truck Test

T F 1. Driving a forklift is very similar to driving a car.

T F 2. If a forklift tips to the side, the operator should try to jump from the lift.

T F 3. On most forklifts, the steering is from the rear.

T F 4. The amount of weight a forklift can safely lift is called its "RATED CAPACITY".

T F 5. Where a load sits on the forks is as important as how much it weighs.

T F 6. A forklift should be inspected once a month.

T F 7. When parking a forklift, you need only to set the brakes.

T F 8. As the operator, you are responsible for the safe operation of the lift.

T F 9. You should never use the forklift for any purpose other than the one which it is designed.

T F 10. Stacking and unstacking must be done carefully because the higher you lift a load, the more unstable the forklift becomes.

T F 11. Lifting a load while you are moving is okay, as long as you are moving forward.

T F 12. If the load blocks your vision, travel in reverse.

T F 13. When following other forklifts, you should always maintain a safe distance of at least three forklift lengths

T F 14. Lifting people with a forklift is okay, as long as they have a solid platform to stand on.

T F 15. A trailer should have the wheels chocked when loading or unloading with a forklift.

_____ _____

Employee Date

Driving Test: Pass Fail

Powered Industrial Truck Test Answers

T F 1. Driving a forklift is similar to driving a car
F-very different

T F 2. If a forklift tips to the side, the operator should try to jump from the lift.
F- should stay with it

T F 3. On most forklifts, the steering is from the rear
T

T F 4. The amount of weight a forklift can safely lift is called its "RATED CAPACITY".
T

T F 5. Where a load sits on the forks is as important as how much it weighs.
T- the farther the load sits out toward the tips of the forks, the more Stress it puts on the lift

T F 6. A forklift should be inspected once a month.
F- once a shift

T F 7. When parking a forklift, you need only to set the brakes.
F- lower forks

T F 8. As the operator, you are responsible for the safe operation of the lift.
T- responsible for you, the lift, the material, and pedestrians

T F 9. You should never use the forklift for any purpose other than the one which it is designed.
T- only used for lifting/lowering materials and moving them from point a to b

T F 10. Stacking and unstacking must be done carefully because the higher you lift a load, the more unstable the forklift becomes.
T increases top heaviness

T F 11. Lifting a load while you are moving is okay, as long as you are moving forward.
F-keep lift still when lifting

T F 12. If the load blocks your vision, travel in reverse.
T

T F 13. When following other forklifts, you should always maintain a safe distance of at least three forklift lengths
T good rule of thumb

T **F** 14. Lifting people with a forklift is okay, as long as they have a solid platform to stand on.
F – need a solid platform, plus guardrails, and secured to the lift

T **F** 15. A trailer should have the wheels chocked when loading or unloading with a forklift.
T always

Project Safety Plan SOP 202

General Info	
Project Name	
Location	
Owner	
Start Date	
Completion Date	

Type of work required at project	X
Demolition	
Steel Erection	
Asbestos Abatement	
Lead Abatement	
Vertical Wall Concrete	
Confined Space	
Blasting	
Earth Retention Systems (for any deep vertical excavation)	
Tunnel or Boring	
Elevated Horizontal Concrete	
Vertical Wall Concrete	
Other Hazardous Tasks	

Site	
Existing Utilities Marked ?	
Water	
Electricity	
Gas	
Sewer	
Local One Call Phone Number	
Video Survey Completed? Date?	
Has Owner completed and Environment Phase 1 (environmental site assessment) This can identify of potential site environmental contaminants.	
Anticipated Trailer/Parking	
Has emergency action plan been developed	

Public Exposure	
Are and road closures anticipated?	
Will any sidewalks be closed?	
List potential general public exposures	
Will covered walkways need to be installed to protect public?	

Will dust and noise control measures be needed?

Site Security	
Is additional site lighting needed?	
Is site security needed?	

General Safety	
Methods to protect floor and wall openings, shafts stairs etc.	
Any special scaffold requirements?	
Will Overhead protection at building entrances be required? Describe	
Who will collect subcontractor SDS & where will they be located?	
Who will collect subcontractor safety programs & where will they be located?	
Special work permits required (hot work, lockout/tagout, confined space)	

Fire Protection	
City/Local requirements for standpipes	
Will bulk fuel storage be allowed on project?	
Will temporary heat be required? If so create temp heat plan.	
Has the local fire department been contacted and notified of site?	

Health Hazards	
For demo projects has the Owner completed an environmental survey. If so all subcontractors should be given a copy	
Do you expect to have any PCB's asbestos, lead, mercury disposal etc?	
So you anticipate any mold exposure?	

Hoisting	
Are cranes anticipated on this project?	
Are any tandem or critical picks anticipated?	
Will a material hoist be used? If so, who designs the tiebacks/foundation?	
Will receiver bays or outrigger platforms be required. If so, complete a safety review of system/guardrail.	

Perimeter guardrails/horizontal lifeline	
What type of perimeter guardrail/horizontal lifeline system will be used?	
Who will install guardrail system?	
If a horizontal lifeline system is used as guardrail, who will design?	
Who will inspect/maintain?	
Who will maintain permits for authorization to remove/replace the system?	

Safety Inspection Checklist

Project: _____ Date: _____

Project #: _____ Supervisor: _____

Type of Inspection

☐ General Job Site

☐ Trade Specific (Trade Partner: _____)

Employee Observation / PPE	Satisfactory	Action Required	Not Applicable	Not Inspected
Hard Hats				
Eye / Face Protection				
Ear Protection				
Dust Masks / Respirators				
Safe Lifting Practices				
Clothing / Knee Pads				
Footwear / Foot Protection				
Gloves / Hand Protection				
Person Fall Protection Equipment				

Housekeeping	Satisfactory	Action Required	Not Applicable	Not Inspected
Exits / Stairs / Walkways Clear				
Piling & Stacking				
Debris Removal				
Nails Bent or Removed				

Railings / Covers / Cables	Satisfactory	Action Required	Not Applicable	Not Inspected
Perimeter / Stairs				
Floor / Wall Openings				
Walkways				
Cable Rail Secured - 3 Clips				

Fire Protection	Satisfactory	Action Required	Not Applicable	Not Inspected
Extinguishers				
Flammable Material Storage				
Welding / Cutting Equipment				
Fire Watch Required				

Lifts	Satisfactory	Action Required	Not Applicable	Not Inspected
Scissor				
Aerial Lifts (Fall Protection)			✔	
Personnel Trained for Use				

Programs / Information	Satisfactory	Action Required	Not Applicable	Not Inspected
New Employee Orientation				
Heat Illness Provention Program				
SWPPP				
Jobsite Safety Meeting				
Pre-Task Meetings / JHA				
Stretch & Flex				
Fall Protection Plans				
Rest Periods				

First Aid / Sanitation	Satisfactory	Action Required	Not Applicable	Not Inspected
Kit / Supplies				
Sanitation/Hand Washing				
Clean Cool Water / Shade				

Tools	Satisfactory	Action Required	Not Applicable	Not Inspected
Condition				
Guarded / Power Cords				
PAT Sign & Training Cards				
Air Hose & Whip Check				

Scaffolding	Satisfactory	Action Required	Not Applicable	Not Inspected
Railings				
Tied to Building				
Planks & Platforms				
Access & Tag				

Ladders & Stairs	Satisfactory	Action Required	Not Applicable	Not Inspected
Ladder Condition / Use				
Ladder Secured / 3' ^ Landing				
Stairs & Ramps				

Electrical	Satisfactory	Action Required	Not Applicable	Not Inspected
Lighting / Covers				
Grounding				
Cords, Plugs & Receptacles				
Temp. Power Boxes / GFCI				
Lock Out Tag Out				

Site/Public & Environmental Protection	Satisfactory	Action Required	Not Applicable	Not Inspected
Excavation / Trenches				
Competent Person				
Earthmoving Equipment				
Forklifts / Cranes / Rigger				
Trench Plates - In place & Safe				
Lighting				
Fences				
Posting Requirements / Signs				
Rebar Protection / Barricades				
Double Containment				
Environmental / Storm Water				

Corrective Action	Responsible Party	Sign Off for Corrective Action

Comments

SITE SPECFIC SAFETY PLAN

Project:
Date of Plan:
PM:
Supt:
Safety:

1) General Information

Job Number:		Client:	
Location/Address:			
Start Date:		Completion Date:	

Select Contract Delivery Method:

CM @ Risk		GC		CMA			

2) Project Type

Type of work required at the project:
(Write ***Y*** for all that apply, or ***N*** for all that do not apply)

Y/N	Type of Work	Y/N	Type of Work
	Blasting		EIFS
	Demolition		Mass excavation
	Steel Erection		Retention systems
	Asbestos or Lead Abatement		Tunneling or boring
	Vertical Wall (Concrete)		Elevated horizontal concrete
	Mechanical		Electrical
	Plumbing		Roofing
	Masonry		Wood Framing
	Confined Space		Tilt Wall/Precast

List any unusual or hazardous tasks or operations:

3) Site Environment

A) Are the existing utilities on the project located and marked (Y for yes, N for no)?
   a. Water:
   b. Electricity:
   c. Gas:
   d. Sewer:
   e. Other:

B) Local One Call Phone Number:

C) Describe adjacent structures, businesses, residential areas, and major roads and highways.

D) Video Survey completed of surrounding structures, roads, and parking lots:

Date completed:

E) Anticipated office trailer location and employee parking (attach site logistics plan):

F) Has site specific Emergency Action Plan been developed and supervision trained (attach EAP)?

4) <u>Traffic Control and Protection of the Public</u>

A) Are any road closures or special traffic control measures anticipated? (If yes, explain or attach a traffic control plan.)

B) Will any sidewalks be closed?

C) List potential General Public exposures during and after working hours. (Ex. building entrances that must be maintained, sidewalks, parking lots, adjacent playgrounds, etc.).

D) Will covered walkways or other protection measures need to be installed. (If yes, explain.)

5) <u>Site Security</u>

A) Fencing and gate type locations:

B) Will security alarm and/or security services be used?

C) Will additional site lighting need to be added? (Explain)

6) <u>General Health and Safety</u>

A) How many temporary toilets will be needed?

B) Who will provide drinking water?

C) Methods to protect floor and wall openings, shafts, stairs and other openings (Be Specific).

D) Any special scaffold requirements?

E) What type of scaffolds will be used?

F) Overhead protection at building entrances?

G) Special work permits required (Y for yes, N for no)?
   a. Hot Work:
   b. Lock out tag out or shutdown procedure:
   c. Confined Space:
   d. Other:

H) Who will collect subcontractor SDS programs?

   Where will they be located?

I) Have Trade Partner Safety Programs been submitted, reviewed, and retained on site?

7) Fire Protection – Prevention

A) City / Local requirements for standpipes?

B) Will bulk fuel storage be allowed on the project?

D) Will temporary heating or air conditioning be required?

E) Have local fire departments been contacted and notified of the site?

8) Environmental Hazards and Controls

A) Is any demolition or remodeling work to be done?
   a. If yes. The owner is required to provide you with a copy of the Environmental Survey? Have you received a copy?
   b. Has a copy been sent to the Safety Representative for the project and all Trade Partners? Explain:

B) Do you expect to have any PCB's, asbestos, chlorofluorocarbons, lead or mercury handling or disposal on the project?

C) Do you anticipate any mold exposure?

D) Discuss dust and noise control exposures and anticipated methods of reducing or eliminating.

9) Crane Hoisting and Material Handling

A) Will there be any cranes on the project? (If yes, describe anticipated crane needs.)

B) Do you anticipate any tandem or critical (exceeding 75% capacity) picks? (If yes, explain.)

C) Will there be a man or material hoist on the project? (If yes, discuss who will rent, install, maintain, and who will install overhead protection at dock area.)

E) If it is a multi-story structure, what method(s) will be used to get materials and people to upper floors?

F) Will receiver bays or outrigger platforms be used, and will they be designed into guardrail system?

10) Perimeter Guardrails/ Horizontal Lifeline System

A) What type of perimeter guardrail/horizontal lifeline system (HLL) will be used?

B) Who will install Guardrail systems?

C) If a horizontal lifeline system is used as a guardrail, who designed the system?

D) Who will inspect/maintain the guardrail systems?

E) Who will maintain the permits for authorization to remove/replace the systems?

11) Special types of training to be required:

Training Types	Proof of Training Presented
Asbestos / Lead Awareness	
Crane / Crane Flagging	
Aerial Lift Boom or Scissor	
Vertical/Column Wall Form	
Fall Protection (Personal Fall Arrest)	
Scaffolding (Frame / Suspended)	
Rigging	
Traffic Control (Flagging)	
Confined Space	
Respiratory Protection / Fit Test	
Other\ Forklift operator	

Additional Comments or Concerns:

Appendices

- **Site logistics plan showing locations of fencing, lighting, entrances, signage, trailer etc.**
- **Emergency Action Plan**

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 107-0 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Voluntary Respirator Use Program

Purpose
The purpose of this operating procedure is to insure the protection of personnel from respiratory hazards through voluntary use of respirators.

Scope
This program applies to any employee who voluntarily uses respiratory protection to perform their work. The exception to this program is the voluntary use of filtering face pieces (dust masks).

Responsibilities
Safety Director/Operations Manager is responsible for all facets of this program and has full authority to make the necessary decisions to ensure success of this program.

Special Definitions
None

Procedure

1.0 RESPIRATOR FIT TESTING

1.1 Respirator fit testing is not required by OSHA when voluntarily using a respirator.

2.0 RESPIRATOR TRAINING

2.1 Each employee will be instructed in the contents of Appendix D of OSHA's respirator standard.

3.0 MEDICAL EVALUATIONS

3.1 Each employee voluntarily using a respirator must be medically able to use that respirator. An initial evaluation by a licensed health care evaluation must be administered and passed before the employee is allowed to use the respirator.

4.0 STORAGE

4.1 The employee's respirator must be cleaned, stored, and maintained so that its use does not present a health hazard to the employee.

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the 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.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 117-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Construction Rigging

Purpose
To establish a standardized method for safely using and maintaining rigging equipment

Scope
All employees required to work in Rigging operations

Responsibilities

Special Definitions

Procedure
1.0 GENERAL

1.1 Inspection and use
1.1.1 Rigging equipment shall be inspected as specified by the manufacturer, by a competent person, before use on each shift and as necessary during its use to ensure that it is safe.
1.2 Defective rigging shall be removed from service.
1.3 The use and maintenance of rigging equipment shall be in accordance with recommendations of the rigging manufacturer and the equipment manufacturer. Rigging equipment shall not be loaded in excess of its recommended safe working load.
1.4 Rigging equipment, when not in use, shall be removed from the immediate work area and properly stored and maintained in a safe condition
1.5 Hoist rope shall not be wrapped around the load.
1.6 Running lines located within 6 ft - 6 in (1.9 m) of the ground or working level shall be guarded or the area restricted by physical barriers to preclude injury or injury from broken lines.
1.7 All eye splices shall be made in an approved manner.
1.8 Rope thimbles of proper size shall be fitted in the eye, except that in slings the use of thimbles shall be optional.
1.9 When hoisting loads, a positive latching device shall be used to secure the load and rigging.
1.10 Hooks, shackles, rings, pad eyes, and other fittings that show excessive wear or that have been bent, twisted, or otherwise damaged shall be removed from service.
1.11 Custom designed grabs, hooks, clamps, or other lifting accessories for such units as modular panels, prefabricated structures, and similar materials shall be marked to indicate the safe working loads and shall be proof-tested, before use, to 125%

of their rated load.

1.12 The practice of multiple lift rigging (Christmas tree lifting) is prohibited.

2.0 WIRE ROPE

2.1 When two or more wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or re-socketed.

2.2 Wire rope removed from service due to defects shall be cut up or plainly marked as unfit for further use as rigging.

2.3 Wire rope clips attached with U-bolts shall have the U-bolts on the unloaded (dead) or short end of the rope. The clip nuts shall be retightened immediately after initial load carrying use and at frequent intervals thereafter.

2.4 When a wedge socket fastening is used, the unloaded (dead) or short end of the wire rope shall be looped back and secured to itself by a clip or have a separate piece of equal size wire rope attached with a clip or be properly secured to an extended wedge. The clip shall not be attached to the load (live) end.

2.5 The spacing of clips should be 6 times the diameter of the wire

2.6 Thimbles shall be used if wire rope is to be spliced.

3.0 WEDGE SOCKET FASTENING

3.1 Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

3.2 Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads shall consist of one continuous piece without knot or splice.

3.3 An eye splice made in any wire rope shall have not less than five full tucks (this requirement shall not preclude the use of another form of splice or connection that can be shown to be as efficient and that is not otherwise prohibited).

3.4 Wire rope shall not be secured by knots except on haul back lines on scrapers.

3.4.1 Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.

3.5 Wire rope clips shall not be used to splice rope.

4.0 CHAIN

4.1 Only alloyed chain shall be used in rigging.

4.2 Chain shall be inspected before initial use and weekly thereafter.

4.3 When used with alloy steel chains, hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments shall have a rated capacity at least equal to that of the chain.

4.4 Job or shop hooks and links, makeshift fasteners formed from bolts and rods, and other similar attachments shall not be used.

5.0 FIBER ROPE (NATURAL AND SYNTHETIC)

5.1 Fiber rope shall not be used if it is frozen or if it has been subjected to acids or excessive heat.

5.2 Fiber rope shall be protected from abrasion by padding where it is fastened or drawn over square corners or sharp or rough surfaces.

5.3 All splices in rope slings provided by the employer shall be made in accordance with fiber rope manufacturer's recommendations.

5.4 Eye splices

5.4.1 In manila rope, eye splices shall contain at least three full tucks and short splices shall contain at least six full tucks (three on each side of the centerline of the splice).

5.4.2 In-layed synthetic fiber rope, eye splices shall contain at least four full tucks and short splices shall contain at least eight full tucks (four on each side of the centerline of the splice).

5.4.3 Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks: this applies to both eye and short splices and all types of fiber rope.

5.4.3.1 For fiber ropes less than 1 in (2.5 cm) diameter, the tails shall project at least six rope diameters beyond the last full tuck.

5.4.3.2 For fiber ropes 1 in (2.5 cm) diameter and larger, the tails shall project at least 6 in (15.2 cm) beyond the last full tuck.

5.4.4 In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

5.4.5 For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support.

5.4.6 Knots shall not be used in lieu of splices.

6.0 SLINGS

6.1 Slings and their fittings and fastenings, shall be inspected before use on each shift and as necessary during use.

6.1.1 Protection shall be provided between the sling and sharp unyielding surfaces of the load to be lifted.

6.2 The use of slings will be such that the entire load is positively secured.

6.3 Lengths

6.3.1 Wire rope slings shall have a minimum length of clear wire rope equal to ten times the rope diameter between each end fitting or eye splice.

7.0 SLING CONFIGURATIONS

7.1 Braided slings shall have a minimum clear length of braided body equal to forty times the diameter of component ropes between each end fitting or eye splice.

7.2 Welded alloy steel chain slings shall have affixed durable permanent identification stating size, grade, rated capacity, and sling manufacturer.

7.3 Wire rope slings shall have affixed a durable permanent identification tag stating the diameter, rated load, lifting capacity in vertical, choker, basket configuration, and date placed in service.

7.4 The employer shall have each synthetic web sling marked or coded to show:

7.4.1 Name or trademark of the manufacturer,

7.4.2 Rated capacities for the type of hitch, and

7.4.3 Type of material

8.0 RIGGING HARDWARE

8.1 Drums, sheaves, and pulleys shall be smooth and free of surface defects that may damage rigging.

8.2 The ratio between the diameter of the rigging and the drum, block, sheave, or pulley tread diameter shall be such that the rigging will adjust itself to the bend without excessive wear, deformation, or damage.

8.3 In no case will the safe diameters of drums, blocks, sheaves, or pulleys be reduced in replacement of such items unless compensating changes are made in terms of the rigging used and the safe loading limits.

8.4 Drums, sheaves, or pulleys having eccentric bores, cracked hubs, spokes, or flanges shall be removed from service.

8.5 Connections, fittings, fastenings, and attachments used with rigging shall be of good quality, of proper size and strength, and shall be installed in accordance with recommendations of the manufacturer.

8.6 Shackles

8.6.1 Only marked shackles shall be used.

8.6.2 Shackles shall not be eccentrically loaded.

8.7 Hooks

8.7.1 The manufacturer's recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. Any hook for which the manufacturer's recommendations are not available shall be tested to twice the intended safe working load before it is put into use. The employer shall maintain a record of the dates and results of such tests.

8.7.2 Open hooks are prohibited in rigging used to hoist loads.

8.7.3 Hoisting hooks rated at 10 tons (9,072 kg) or larger shall be provided with a means for safe handling

8.8 Drums

8.8.1 Drums shall have sufficient rope capacity with recommended rope size and reeving to perform all hoisting and lowering functions.

8.8.2 At least three full wraps (not layers) of rope shall remain on the drum at all times.

8.8.3 The drum end of the rope shall be anchored by a clamp securely attached to the drum with an arrangement approved by the manufacturer.

8.8.4 Grooved drums shall have the correct groove pitch for the diameter of the rope. The depth of the groove shall be correct for the diameter of the rope.

8.8.4.1 The flanges on grooved drums shall project beyond the last layer of rope a distance of either 2 in (5 cm) or twice the diameter of the rope, whichever is greater.

8.8.4.2 The flanges on un-grooved drums shall project beyond the last layer of rope a distance of either 2 1/2 in (6.3 cm) or twice the diameter of the rope, whichever is greater.

8.9 Sheaves

8.9.1 Sheaves shall be compatible with the size of rope used, as specified by the manufacturer.

8.9.2 Sheaves shall be inspected to ensure they are of correct size, properly aligned, lubricated, and in good condition.

8.9.3 When rope is subject to riding or jumping off a sheave, the sheave shall be equipped with cable-keepers.

8.10 Eye bolts

8.10.1 Shoulder-less eye bolts shall not be loaded at an angle.

8.10.2 Eye bolts shall only be loaded in the plain of the eye and shall not be loaded at angles of less than 45° to the horizontal

Monthly Steel Alloy Chain Sling Inspection Record

	Yes	No
Marked with a tag to identify size, grade, reach and rated capacity?	___	___
Any worn or damaged links?	___	___
Any cracked hooks?	___	___
Any defective welds?	___	___
Any pear shaped links?	___	___
Hooks opened more than 15 % of the normal throat opening or twisted more than 10 degrees from the plane of the unbent hook?	___	___

Date of Inspection:_____

Inspected by: _____

Jobsite Safety Responsibility Checklist SOP 201

Project Name :

Description	Responsibility
Building Access	
Cribbing/Shoring	
Electrical Rooms – Temporary Protection/Signage	
Fire Protection	
Fire Watch	
First Aid Kit	
Floor Holes	
G.F.C.I.'s	
Gas Storage	
General House Cleaning	
Overhead Protection	
Personal Protective Equipment	
Power Line Protection	
Propane Storage	
Road Protection	
Scaffolding (Define Multi-Use)	
SDS Sheets	
Security	
Signage - General Hazard Warning	
Signage - Traffic Control	
Site Fencing	
Site Security Lighting	
Temporary Guardrails/Barricades - Elevator	
Temporary Guardrails/Barricades - Holes/Shafts	
Temporary Guardrails/Barricades - Perimeter	
Temporary Guardrails/Barricades - Stairways	
Temporary Heat	
Temporary Ladders	
Temporary Lights	
Temporary Partitions	
Temporary Roads	
Tool Box Talks	
Traffic Control	
Underground Utility Location	
Walkways (Define)	

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 153-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Silica Exposure Control Plan

Purpose
The purpose of an exposure control plan (ECP) is to set out our approach to protecting workers from harmful exposure to airborne silica dust.

A combination of control measures will be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control technologies available, and to ensure that the best practices, as described in this ECP, are followed at our worksites.

The work procedures we establish will protect not only our workers but all workers on our customers' worksites. This standard will outline the protective measures needed when performing tasks that create silica dusts such as; cutting, grinding, milling, abrading or sawing concrete or natural rock.

All protective procedures will be driven by Newkirk Novak using personal monitoring techniques as well as monitoring the area around dust generation activities.

Scope
To define the requirements, responsibilities, and procedures necessary to reduce the risk of our employees to Silica exposure.

Responsibilities
Competent Program Administrator
The Competent Program Administrator is responsible for:

Issuing and administering this program and making sure that it satisfies all applicable federal, state and local requirements.

Ensuring that employees have available to them initial and refresher training on the use of this policy.

Conducting a periodic review of the effectiveness of the ECP. This would include a review of the available dust-control technologies to ensure these are selected and used when practical.

Initiating sampling of worker exposure to silica when there are non-standard work practices for which the control methods to be used have not been proven to be adequately protective.

This Silica Exposure Control Plan must be evaluated at least once per year, as necessary. Situations where reevaluation may be necessary include regulatory updates, changes in equipment, and exposure incidents. Any changes resulting from this process must be communicated to affected employees.

Project Managers, Superintendents and Foremen (Competent Person)

Project Managers, Superintendents and Foremen are responsible for:

Substitution of less hazardous products for those that contain crystalline silica is required. Such as a Project Manager sourcing grout mix that has less silica content.

Ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this exposure control plan (ECP) are readily available where and when they are required.

Providing a job-specific ECP for each project, which outlines in detail the work methods and practices that will be followed on each site. Considerations will include:

Availability and delivery of all required tools/equipment

Scope and nature of silica dust generation work to be conducted

Control methods to be used and level of respiratory protection required

Ensuring supervisors and workers are educated and trained to an acceptable level of competency.

Coordinating the work with the prime contractor and other employers to ensure a safe work environment.

Selecting, implementing, and documenting the appropriate site-specific control measures

Providing adequate instruction to workers on the hazards of working with silica-containing materials (e.g., concrete) and on the precautions specified in the job-specific plan covering hazards at the location

Ensuring that workers are using the proper respirators and have been fit-tested, and that the results are recorded

Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled

Communicating with the prime contractor and other sub-contractors to ensure a safe work environment

Ensuring that all required tools, equipment, and personal protective equipment are readily available to the field as required by the ECP.

Human Resources
Human Resources are responsible for:

Maintaining records of training, fit-test results, crew talks, and inspections (equipment, PPE, work methods/practices).

Maintaining training records for all employees included in the training sessions

Employees
Employees are responsible for:

Knowing the hazards of silica dust exposure

Using the assigned personal protective equipment in an effective and safe manner

Using the appropriate control methods outlined within the Silica Control Permit

Ensure you are trained on any equipment used

Setting up the operation in accordance with the site-specific plan and/or competent person

Following established work procedures as directed by the supervisor/competent person

Reporting any unsafe conditions or acts to the supervisor/competent person

Knowing how and when to report exposure incidents

Special Definitions
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 this policy

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.

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.

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 this policy

Procedure

1.0 GENERAL

1.1 Silica is the second most common mineral on earth and makes up nearly all of what we call "sand" and "rock." Silica exists in many forms—one of these, "crystalline" silica (including quartz), is the most abundant and poses the greatest concern for human health. Some common materials that contain silica include:

1.1.1 Rock and sand
1.1.2 Topsoil and fill
1.1.3 Concrete, cement, and mortar
1.1.4 Masonry, brick, and tile
1.1.5 Granite, sandstone, and slate
1.1.6 Asphalt (containing rock and stone)
1.1.7 Fibrous-cement board containing silica

1.2 Silica is a primary component of many common construction materials, and silica containing dust can be generated during many construction activities, including:

1.2.1 Abrasive blasting (e.g., of concrete structures)
1.2.2 Jackhammering, chipping, or drilling rock or concrete
1.2.3 Cutting brick or tiles
1.2.4 Sawing or grinding concrete
1.2.5 Tuck point grinding Road construction
1.2.6 Loading, hauling, and dumping gravel
1.2.7 Demolition of structures containing concrete
1.2.8 Sweeping concrete dust

1.3 Unprotected workers performing these activities, or working in the vicinity, can be exposed to harmful levels of airborne silica. Workers in other industries can also be exposed to silica, for example in the manufacturing of toothpaste or pottery, or when loading coal (which can contain quartz) into the hold of a ship.

2.0 HEALTH EFFECTS

2.1 Exposure to silica has been known to cause silicosis, lung cancer, pulmonary tuberculosis and other airway diseases. Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.

2.2 A worker may develop any of three types of silicosis, depending on the concentrations of silica dust and the duration of exposure:

2.2.1 Chronic silicosis—develops after 10 or more years of exposure to crystalline silica at relatively low concentrations
2.2.2 Accelerated silicosis—develops 5 to 10 years after initial exposure to crystalline silica at high concentrations
2.2.3 Acute silicosis—develops within a few weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica

2.3 Initially, workers with silicosis may have no symptoms: however, as the disease progresses, a worker may experience:

2.3.1 Shortness of breath

2.3.2 Severe cough

2.3.3 Weakness

2.4 These symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

3.0 INDUSTRIAL HYGIENE

3.1 Threshold Limit Value Time Weighted Average – TLV TWA

3.1.1 Newkirk Novak will employ the Occupational Safety and Health Acts permissible exposure over an 8-hour work day is defined as the TLV TWA or Threshold Limit Value Time Weighted Average. The TLV TWA for Respirable Silica is 0.025 mg/m3.

3.1.2 A worker's exposure to silica is kept as low as reasonably achievable. Employees must not be exposed or expected to be exposed to airborne concentrations of silica more than 25 mg/m3 over an 8-hour period will be assessed by conducting personal air monitoring. Atmospheric testing results should be assessed before a worker is exposed to any silica hazard.

3.2 Method of Compliance – Personal Air Monitoring

3.2.1 All protective procedures will be driven using personal monitoring techniques as well as monitoring the area around silica dust generation activities.

3.2.2 All data shall be collected on a Sample Form and turned into the HR Department/Management or competent person

3.2.3 At times, we may perform periodic personal exposure monitoring to ensure our employees are below the TLV TWA of 25 mg/m3.

3.2.4 Protect workers from respirable crystalline silica exposures above the permissible exposure limit of 50 mg/m3, averaged over an 8-hour day.

3.3 Periodic Monitoring

3.3.1 Newkirk Novak will periodically monitor employee exposures to respirable silica dusts and respirable dust if conditions permit using an industry standard cyclone to capture respirable particles.

4.0 METHODS OF COMPLIANCE

4.1 Where feasible, silica dust exposure must be controlled through engineering controls and work practices in preference to respiratory protection. Respirators can and should be used in conjunction with engineering, administrative & work practice controls. PPE should always be selected as the last line of defense and should not be the first and only control method.

4.2 In cases of exposure levels above the limit, a written plan to reduce that exposure will be prepared. This plan will be explained in the monitoring results letter sent to the exposed employee. The area superintendent will receive a copy of this notice and will be responsible for the prompt implementation of this plan.

4.3 A key step in developing a silica exposure control plan is to identify the work activities that would put workers at risk of exposure.

4.3.1 Work activities — that may generate airborne silica dust—for silica, the route of exposure is through the inhalation of airborne dust. Newkirk Novak will provide the work function where silica exposure exists.

4.3.2 Identify workers at risk of exposure—Subcontractors have identified the following crafts that are at risk of exposure. They are: masonry/installers

4.3.3 Amount of exposure —Newkirk Novak will rely on our Silica Exposure Control Plan in conjunction with Industrial Hygiene exposure monitoring to determine the magnitude of exposure to respirable crystalline silica dusts.

4.3.4 Duration of exposure—Newkirk Novakwill monitor the duration of exposure based on the job tasks being performed and ensure all safety measures are being followed.

4.4 Effective control options must be used to eliminate or reduce the risk to workers from the hazards of silica dust exposure. The following hierarchy of control measures must be followed:

4.4.1 Elimination/Substitution (e.g., using products with less silica or using work methods that would eliminate the need for surface grinding)

4.4.2 Engineering Controls (e.g., local exhaust ventilation, negative pressure enclosure, dust collection system)

4.4.3 Work Practice Controls (e.g., water)

4.4.4 Administrative controls (e.g., coordination of tasks with subcontractors, signage)

4.4.5 The use of proper PPE such as gloves, coveralls and eye protection when exposed to silica. Personal protective equipment such as gloves, coveralls and eye protection will be used to control silica exposures when needed and as a last resort.

4.5 Our company commits to developing knowledge and expertise about these controls, and to establishing policies/procedures to protect workers from harmful exposure and to minimize reliance on respirators. Effective engineering controls such as HEPA vacuum attachments and wetting methods, which control silica dust at its source, are readily available. These controls have been proven to reduce airborne dust levels significantly when selected and operated in accordance with best practices. We know that engineering controls alone do not reduce airborne silica to safe levels, so in most cases other control measures, including respiratory protection, may be necessary. However, engineering and work practice controls must be used to reduce employee exposure to respirable crystalline silica to the lowest feasible level and maintain it at that level when required.

4.6 If we take on a job that could release an unusually high amount of dust, and we are unsure of the adequacy of our control measures, we will conduct air sampling in order to ensure that control methods are protective.

4.7 We will reduce or eliminate worker exposure to silica dust by selecting a combination of the following controls listed in order of preference:

4.7.1 Elimination and substitution

4.7.2 Engineering

4.7.3 Administrative

4.7.4 Personal protective equipment

4.8 Elimination and Substitution

4.8.1 We recognize the importance of planning the work in order to minimize the amount of silica dust generated. During the project planning phase, we will

advocate for the use grout mixes that either contains zero silica or the least amount as possible.

4.9 Engineering Controls

4.9.1 Selecting an appropriate control measure depends on the specifics of the operation. In some cases, local exhaust ventilation (LEV) is more effective at controlling exposure (e.g., during grinding operations) than wetting methods. In a different application, wetting may be more effective (e.g., during cutting operations) than LEV. However, using LEV may reduce the amount of final cleaning required, as the silica dust is captured.

4.9.2 Our dust control systems may employ the following techniques:

4.9.2.1 Local exhaust ventilation (LEV)

4.9.2.2 Restricting or isolating the work activity with barriers or full enclosures (this may be the only option where LEV or WDS is not practical or effective). This includes use of a Negative Pressure Enclosure utilizing negative air machines.

4.10 Local Exhaust Ventilation (LEV)

4.10.1 When LEV is used in our work, we will employ the following systems and safe work practices:

4.10.1.1 Vacuum attachment systems to capture and control the dust at its source whenever possible

4.10.1.2 Dust control systems (used regularly and well maintained).

4.10.1.3 Grinding wheels operated at the manufacturers recommended rpm (operating in excess of this can generate significantly higher airborne dust levels not to mention cause serious injury due to the wheel exploding).

4.10.1.4 Retrofit shrouds or exhaust cowlings for corner grinding; use manufacturer-specified rpm speeds and a well-maintained HEPA vacuum.

4.10.1.5 Diamond stone grinders, which allow for the use of a more efficient suction casing on the grinder, whenever practicable.

4.10.1.6 HEPA or good quality, multi-stage vacuum units approved for use with silica dust. [The vacuum units should be capable of creating a target airflow of at least 70 cfm. This should achieve a face velocity at the shroud of about 1.3 m/s (260 fpm)—the higher the face velocity, the more dust captured at source.]

4.10.1.7 Work planning, so that concrete grinding, sawing or cutting can be completed when wet (dust release can be significantly reduced).

4.10.1.8 Good housekeeping work practices (for example, use vacuums with high-efficiency particulate air (HEPA) filters, or use wet sweeping).

4.10.1.9 Train workers and supervisors on how to properly use and maintain the equipment.

4.11 Barriers and Enclosures

4.11.1 When barriers or enclosures are used in our work, we will follow these safe work practices:

4.11.1.1 The site foreman will determine the type and design of barrier or enclosure (based on the work activity and the work area) and ensure it is constructed in accordance with the work plan. Barriers may be simple hazard-flagging ribbon or more restrictive enclosure.

4.11.1.2 We will use commercially available negative air units when constructing a full enclosure. And will outfit the enclosure with enough negative air units to maintain at a minimum 4 air changes per hour or manufacturers recommendations. See the manufacturers Negative Air Machine equipment training/safe use practices before

4.12 Administrative/Work Practice Controls

4.12.1 We will be following Administrative work practice controls:

4.12.1.1 A Silica Exposure Control permit shall be utilized prior to the start of work.

4.12.1.2 We will establish procedures for housekeeping, restricting work areas, personal hygiene, worker training, and supervision.

4.12.1.3 As part of our project planning, we will assess when silica dust may be generated and plan to eliminate or control the dust at the source. We recognize that awareness and planning are key factors in the prevention of silicosis.

4.12.1.4 Warning signs will be posted to warn workers about the hazards of silica and to specify any protective equipment required (for example, respirators).

4.12.1.5 Work schedules will be posted at the boundaries of work areas contaminated with silica dust.

4.12.1.6 Work that generates silica dust will be conducted after hours, when access to other unprotected workers cannot be restricted.

4.12.2 We will develop a site a site-specific exposure control plan to cover project-specific issues (e.g., scope of work, project location and site-specific hazards) and to be kept available at the worksite.

4.12.3 When water spray systems are used in our work, we will follow these safe work practices:

4.12.3.1 Pneumatic grinders will be used instead of electric-powered grinders if water is the method of control.

4.12.3.2 Pressure and flow rate of water will be controlled in accordance with tool manufacturers' specifications (for cutting saws, a minimum of 0.5 liters of water per minute should be used).

4.12.3.3 When sawing concrete or masonry, we will use only saws that provide water to the blade.

4.12.3.4 Wet slurry will be cleaned from work surfaces when the work is completed, using a wet vacuum or wet sweeping.

4.13 Respiratory Protection

4.13.1 Respirators shall be provided at Company expense and used by the employee in the following circumstances:

4.13.1.1 During the period necessary to install and/or implement feasible engineering controls

4.13.1.2 Where feasible engineering controls and work practices by themselves are not sufficient to reduce employee exposure to or below the exposure limits.

4.13.1.3 During intermittent or limited duration work operations where engineering controls and work practices are not feasible or required.

4.13.1.4 In emergencies

4.13.2 Generally, for exposures in atmospheres between 0.025 mg/m3 and 0.125 mg/m3, the appropriate respirator will be a negative pressure respirator with P-100 HEPA

cartridges. Filter elements must be changed at the end of the service life or at the beginning of each shift, whichever comes first.

4.13.3 Employees exposed to Silica shall be given adequate time to wash their face and respirator to prevent skin irritation and to change filter elements. Protective clothing should be provided as necessary to limit exposure to the eyes or skin.

4.13.4 The job supervisor is responsible to ensure the proper respirators are worn in the approved manner, and that all hygiene considerations (wash-up time, filter element changes and protective clothing) are followed.

4.13.5 Before an employee can use a negative pressure respirator for silica exposure, that employee must be fit tested properly on an annual basis. This fit test must follow the protocol for fit testing to be done at the appropriate intervals and the competent administrator will assist operating and maintenance areas in determining which employees are to be included in this program. A current listing of fit tested employees will be maintained by the competent administrator as part of this written program. Employees without a current fit test shall not be assigned to jobs that are known to create silica exposures.

5.0 MEDICAL SURVEILLANCE

5.1 A medical surveillance program must be made available to those employees who are or may be exposed to silica:

5.1.1 At no cost to the employee

5.1.2 At a reasonable time and place

5.1.3 For each employee who will be required under this policy to wear a respirator for 30 or more days per year

5.1.4 All medical examination and procedures are performed by a PLHCP

5.2 Initial Exam

5.2.1 Newkirk Novak will make available an initial baseline medical exam within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this policy within the last three years.

5.2.2 The examination shall consist of:

5.2.2.1 A medical work history concentrating on silica exposure in the past, present and future. Any history of respiratory system dysfunction, including signs and symptoms of respiratory disease; history of tuberculosis; and smoking status and history.

5.2.2.2 A physical exam with emphasis on the respiratory system.

5.2.2.3 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 than16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader

5.2.2.4 A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in some second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOH-approve spirometry course.

5.3 Periodic Exams

5.3.1 Newkirk Novak shall make available medical examinations that include the procedures outline above at least every 3 years, or more frequently if recommended by the PLHCP

6.0 RECORDKEEPING AND TRAINING

6.1 A copy of this policy is located in our main office

6.2 A copy of the PLHCP's written report for the employee shall be kept in accordance with employment laws and company policy.

6.3 Air monitoring data shall be kept in accordance with employment laws and company policy.

6.4 Objective data shall be kept in accordance with employment laws and company policy.

6.5 Newkirk Novak will ensure that each employee with respect to training can demonstrate knowledge and understanding of:

6.5.1 Health hazards associated with silica exposure

6.5.2 The tasks in their workplace that could result in exposure to respirable crystalline silica

6.5.3 Proper use, storage and maintenance of engineering controls, work practices and respirators

6.5.4 The contents of this policy

6.5.5 Who the competent person is on their site

6.5.6 The purpose and description of the medical surveillance program

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 125 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Scaffold Safety - Construction

Purpose
These procedures are implemented to ensure safe operation while working on scaffolds. These procedures will be reviewed and updated as needed to comply with new OSHA regulations and new best practices in scaffolding.

Scope
The scaffolding standard applies to all scaffolds used at the jobsite.

This general scaffold plan applies to:

All employees and subcontractors who perform work while on a scaffold

All employees and subcontractors who are involved in erecting, dissembling, moving, operating, repairing, maintaining, or inspecting scaffolds

All scaffolds on all sites where the company employee(s) is doing work

Responsibilities
The Superintendent is responsible for:

Completing the Scaffolding Safety Checklist for each job-site where scaffolds are used

Ensuring all employees (including subcontractors) erect and use scaffolds in a safe manner and implement the recommended fall protection systems

Ensuring all employees (including subcontractors) is trained in the proper use of scaffolds and fall protection systems

Assisting employees in coming up with alternatives where certain types of scaffolds cannot be used

Ensuring scaffolding is erected, used, and dismantled in accordance with OSHA regulations

The employee is responsible for:

Erecting, disassembling, moving, operating, repairing, maintaining, or inspecting the scaffolds in accordance with the competent person's recommendation and/or guideline

Implementing the fall protection systems recommended by the job-site Superintendent or the competent person

Reporting situations to the competent person when conventional scaffolds cannot be used for the type of work to be performed

Aborting activities when it becomes unsafe to working at heights such as high winds, lightning, heavy rain, snow, and sleet

Taking care of the fall protection systems provided for use such as harnesses and lanyards, and safety nets

Reporting unsafe acts, near misses, and accidents to the Foreman immediately

Unsafe equipment or conditions must be tagged out by competent person.

Employees are required to comply with the the tags on unsafe equipment.

Special Definitions
See Appendix A

Procedure
See Appendix A for design criteria

Appendix A

The following general procedures apply to all scaffold operations at the job-sites. Some of the general procedures may not apply to the operations being conducted at the job-sites.

Scaffold Capacity

The following are the minimum requirements for capacity of scaffolds:

(a)(1) Each scaffold and scaffold component we use will support, without failure, its own weight and at least four (4) times the maximum intended load applied or transmitted to it.

(a)(2) Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.

(a)(3) Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.

(a)(4) Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

(a)(5) The stall load of any scaffold hoist shall not exceed 3 times its rated load.

(a)(6) Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with paragraph (a) of this section.

Scaffold Platform Construction

This section documents the procedures and safety requirements to construct scaffold platforms.

(b)(1) Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:

(i) Each platform unit (e.g., scaffold plank, fabricated plank, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch (2.5 cm) wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

(ii) Where the employer makes the demonstration provided for in paragraph (b)(1)(i) of this section, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 91/2 inches (24.1 cm). Exception to paragraph (b)(1): The requirement in paragraph (b)(1) to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees and sub-contractors performing scaffold erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe-working conditions is required.

(b)(2) Except as provided in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, each scaffold platform and walkway shall be at least 18 inches (46 cm) wide.

(i) Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches (30 cm) wide. There is no minimum width requirement

for boatswains' chairs.

Note to paragraph (b)(2)(i): pursuant to an administrative stay effective November 29, 1996 and published in the Federal Register on November 25, 1996, the requirement in paragraph (b)(2)(i) that roof bracket scaffolds be at least 12 inches wide is stayed until November 25, 1997 or until rulemaking regarding the minimum width of roof bracket scaffolds has been completed, whichever is later.

(ii) Where scaffolds must be used in areas that the employer can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches (46 cm) wide, such platforms and walkways shall be as wide as feasible, and employees and sub-contractors on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.

(b)(3) Except as provided in paragraphs (b)(3) (i) and (ii) of this section, the front edge of all platforms shall not be more than 14 inches (36 cm) from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used in accordance with paragraph (g) of this section to protect employees and sub-contractors from falling.

(i) The maximum distance from the face for outrigger scaffolds shall be 3 inches (8 cm).

(ii) The maximum distance from the face for plastering and lathing operations shall be 18 inches (46 cm).

(b)(4) Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches (15 cm).

(b)(5)

(i) Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches (30 cm) unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees and sub-contractors and/or materials without tipping, or has guardrails which block employee access to the cantilevered end.

(ii) Each platform greater than 10 feet in length shall not extend over its support more than 18 inches (46 cm), unless it is designed and installed so that the cantilevered portion of the platform is able to support employees and sub-contractors without tipping, or has guardrails which block employee access to the cantilevered end.

(b)(6) On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate support surface. This provision does not preclude the use of common support members, such as "T" sections, to support abutting planks, or hook on platforms designed to rest on common supports.

(b)(7) On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches (30 cm) unless the platforms are nailed together or otherwise restrained to prevent movement.

(b)(8) At all points of a scaffold where the platform changes direction, such as turning a corner, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms which rest at right angles over the same bearer shall be laid second, on top of the first platform.

(b)(9) Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes. however, the coating may not obscure the top or bottom wood surfaces.

(b)(10) Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the user maintains the scaffold's structural integrity. Scaffold components manufactured by different manufacturers shall not be modified in order to intermix components, unless a competent person determines the resulting scaffold is structurally sound.

(b)(11) Scaffold components made of dissimilar metals shall not be used together unless a

competent person has determined that galvanic action will not reduce the strength of any component to a level below that required by paragraph (a)(1) of this section.

Criteria for Supported Scaffolds

(c)(1) Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:

(i) Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer legs.

(ii) Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet (6.1 m) or less thereafter for scaffolds 3 feet (0.91 m) wide or less, and every 26 feet (7.9 m) or less thereafter for scaffolds greater than 3 feet (0.91 m) wide. The top guy, tie or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (9.1 m) (measured from one end [not both] towards the other).

(iii) Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

(c)(2) Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mudsills or other adequate firm foundation.

(i) Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

(ii) Unstable objects shall not be used to support scaffolds or platform units.

(iii) Unstable objects shall not be used as working platforms.

(iv) Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.

(v) Forklifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the forklift is not moved horizontally while the platform is occupied.

(c)(3) Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

Criteria for Suspension Scaffolds

(d)(1) All suspension scaffold support devices, such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).

(d)(2) Suspension scaffold outrigger beams, when used, shall be made of structural metal or equivalent strength material, and shall be restrained to prevent movement.

(d)(3) The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights, except masons' multi-point adjustable suspension scaffold outrigger beams shall not be stabilized by counterweights.

(i) Before the scaffold is used, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed. In addition, masons' multi-point adjustable suspension scaffold connections shall be designed by an engineer experienced in such

scaffold design.

(ii) Counterweights shall be made of non-flowable material. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.

(iii) Only those items specifically designed as counterweights shall be used to counterweight scaffold systems. Construction materials such as, but not limited to, masonry units and rolls of roofing felt, shall not be used as counterweights.

(iv) Counterweights shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.

(v) Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled.

(vi) Outrigger beams, which are not stabilized by bolts or other direct connections to the floor or roof deck, shall be secured by tiebacks.

(vii) Tiebacks shall be equivalent in strength to the suspension ropes.

(viii) Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). However, where the employer can demonstrate that it is not possible to place an outrigger beam perpendicular to the face of the building or structure because of obstructions that cannot be moved, the outrigger beam may be placed at some other angle, provided opposing angle tiebacks are used.

(ix) Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorage includes structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

(x) Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.

(d)(4) Suspension scaffold outrigger beams shall be:

(i) Provided with stop bolts or shackles at both ends.

(ii) Securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams.

(iii) Installed with all bearing supports perpendicular to the beam center line.

(iv) Set and maintained with the web in a vertical position. and

(v) When an outrigger beam is used, the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.

(d)(5) Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be:

(i) Made of steel, wrought iron, or materials of equivalent strength.

(ii) Supported by bearing blocks. and

(iii) Secured against movement by tiebacks installed at right angles to the face of the building or structure, or opposing angle tiebacks shall be installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

(iv) Tiebacks shall be equivalent in strength to the hoisting rope.

(d)(6) When winding drum hoists are used on a suspension scaffold, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension ropes shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with means to prevent the end from passing through the hoist.

(d)(7) The use of repaired wire rope as suspension rope is prohibited.

(d)(8) Wire suspension ropes shall not be joined together except through the use of eye splice thimbles connected with shackles or coverplates and bolts.

(d)(9) The load end of wire suspension ropes shall be equipped with proper size thimbles and

secured by eyesplicing or equivalent means.

(d)(10) Ropes shall be inspected for defects by a competent person prior to each workshift and after every occurrence, which could affect a rope's integrity. Ropes shall be replaced if any of the following conditions exist:

(i) Any physical damage, which impairs the function and strength of the rope.

(ii) Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).

(iii) Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.

(iv) Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.

(v) Heat damage caused by a torch or any damage caused by contact with electrical wires.

(vi) Evidence that the secondary brake has been activated during an overspeed condition and has engaged the suspension rope.

(d)(11) Swaged attachments or spliced eyes on wire suspension ropes shall not be used unless they are made by the wire rope manufacturer or a qualified person.

(d)(12) When wire rope clips are used on suspension scaffolds:

(i) There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart.

(ii) Clips shall be installed according to the manufacturer's recommendations.

(iii) Clips shall be retightened to the manufacturer's recommendations after the initial loading.

(iv) Clips shall be inspected and retightened to the manufacturer's recommendations at the start of each workshift thereafter.

(v) U-bolt clips shall not be used at the point of suspension for any scaffold hoist.

(vi) When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.

(d)(13) Suspension scaffold power-operated hoists and manual hoists shall be tested by a qualified testing laboratory.

(d)(14) Gasoline-powered equipment and hoists shall not be used on suspension scaffolds.

(d)(15) Gears and brakes of power-operated hoists used on suspension scaffolds shall be enclosed.

(d)(16) In addition to the normal operating brake, suspension scaffold power-operated hoists and manually operated hoists shall have a braking device or locking pawl which engages automatically when a hoist makes either of the following uncontrolled movements: an instantaneous change in momentum or an accelerated overspeed.

(d)(17) Manually operated hoists shall require a positive crank force to descend.

(d)(18) Two-point and multi-point suspension scaffolds shall be tied or otherwise secured to prevent them from swaying, as determined to be necessary based on an evaluation by a competent person. Window cleaners' anchors shall not be used for this purpose.

(d)(19) Devices whose sole function is to provide emergency escape and rescue shall not be used as working platforms. This provision does not preclude the use of systems, which are designed to function both as suspension scaffolds and emergency systems.

Gaining Access to Scaffolds

(e) This paragraph applies to scaffold access for all employees.

(e)(1) When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Crossbraces shall not be used as a means of access.

(e)(2) Portable, hook-on, and attachable ladders (Additional requirements for the proper construction and use of portable ladders are contained in subpart X of this part-Stairways and Ladders):

(i) Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold.

(ii) Hook-on and attachable ladders shall be positioned so that their bottom rung is not ore than 24 inches (61 cm) above the scaffold supporting level.

(iii) When hook-on and attachable ladders are used on a supported scaffold more than 35 feet (10.7 m) high, they shall have rest platforms at 35-foot (10.7 m) maximum vertical intervals.

(iv) Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold used.

(v) Hook-on and attachable ladders shall have a minimum rung length of 111/2 inches (29 cm). and

(vi) Hook-on and attachable ladders shall have uniformly spaced rungs with a maximum spacing between rungs of 163/4 inches.

(e)(3) Stairway-type ladders shall:

(i) Be positioned such that their bottom step is not more than 24 inches (61 cm) above the scaffold supporting level.

(ii) Be provided with rest platforms at 12 foot (3.7 m) maximum vertical intervals.

(iii) Have a minimum step width of 16 inches (41 cm), except that mobile scaffold stairway-type ladders shall have a minimum step width of 111/2 inches (30 cm). and

(iv) Have slip-resistant treads on all steps and landings.

(e)(4) Stairtowers (scaffold stairway/towers) shall be positioned such that their bottom step is not more than 24 inches (61 cm.) above the scaffold supporting level.

(i) A stairrail consisting of a toprail and a midrail shall be provided on each side of each scaffold stairway.

(ii) The toprail of each stairrail system shall also be capable of serving as a handrail, unless a separate handrail is provided.

(iii) Handrails, and toprails that serve as handrails, shall provide an adequate handhold for employees and sub-contractors grasping them to avoid falling.

(iv) Stair rail systems and handrails shall be surfaced to prevent injury to employees and sub-contractors from punctures or lacerations, and to prevent snagging of clothing.

(v) The ends of stairrail systems and handrails shall be constructed so that they do not constitute a projection hazard.

(vi) Handrails, and toprails that are used as handrails, shall be at least 3 inches (7.6 cm) from other objects.

(vii) Stair rails shall be not less than 28 inches (71 cm) nor more than 37 inches (94 cm) from the upper surface of the stairrail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

(viii) A landing platform at least 18 inches (45.7 cm) wide by at least 18 inches (45.7 cm) long shall be provided at each level.

(ix) Each scaffold stairway shall be at least 18 inches (45.7 cm) wide between stairrails.

(x) Treads and landings shall have slip-resistant surfaces.

(xi) Stairways shall be installed between 40 degrees and 60 degrees from the horizontal.

(xii) Guardrails meeting the requirements of paragraph (g)(4) of this section shall be provided on the open sides and ends of each landing.

(xiii) Riser height shall be uniform, within 1/4 inch, (0.6 cm) for each flight of stairs. Greater variations in riser height are allowed for the top and bottom steps of the entire system, not for each flight of stairs.

(xiv) Tread depth shall be uniform, within 1/4 inch, for each flight of stairs.

(e)(5) Ramps and walkways

(i) Ramps and walkways 6 feet (1.8 m) or more above lower levels shall have guardrail

systems which comply with subpart M of this part-Fall Protection.

(ii) No ramp or walkway shall be inclined more than a slope of one (1) vertical to three (3) horizontal (20 degrees above the horizontal).

(iii)If the slope of a ramp or a walkway is steeper than one (1) vertical in eight (8) horizontal, the ramp or walkway shall have cleats not more than fourteen (14) inches (35 cm) apart which are securely fastened to the planks to provide footing.

(e)(6) Integral prefabricated scaffold access frames shall:

(i) Be specifically designed and constructed for use as ladder rungs.

(ii) Have a rung length of at least 8 inches (20 cm).

(iii)Not be used as work platforms when rungs are less than 111/2 inches in length, unless each affected employee uses fall protection, or a positioning device, which complies with §1926.502.

(iv)Be uniformly spaced within each frame section.

(v) Be provided with rest platforms at 35-foot (10.7 m) maximum vertical intervals on all supported scaffolds more than 35 feet (10.7 m) high. and

(vi)Have a maximum spacing between rungs of 163/4 inches (43 cm). Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 163/4 inches (43 cm).

(e)(7) Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.

(e)(8) Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches (36 cm) horizontally and not more than 24 inches (61 cm) vertically from the other surface.

(e)(9) Effective September 2, 1997, access for employees and sub-contractors erecting or dismantling supported scaffolds shall be in accordance with the following:

(i) The employer shall provide safe means of access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. The employer shall have a competent person determine whether it is feasible or would pose a greater hazard to provide, and have employees and sub-contractors use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

(ii) Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

(iii)When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

(iv)Cross braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

Scaffold Use

(f)(1) Scaffolds and scaffold components shall not be loaded in excess of their maximum intended loads or rated capacities, whichever is less.

(f)(2) The use of shore or lean-to-scaffolds is prohibited.

(f)(3) Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

(f)(4) Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

(f)(5) Scaffolds shall not be moved horizontally while employees and sub-contractors are on them, unless they have been designed by a registered professional engineer specifically for such movement or, for mobile scaffolds, where the provisions of §1926.452(w) are followed.

(f)(6) The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

Insulated Lines		
Voltage	**Minimum distance**	**Alternatives**
Less than 300 volts	3 feet (0.9 m)	
300 volts to 50 kv	10 feet (3.1 m)	
More than 50 kv	10 feet (3.1 m) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)

Uninsulated Lines		
Voltage	**Minimum distance**	**Alternatives**
Less than 50 kv	10 feet (3.1 m)	
More than 50 kv	10 feet (3.1 m) plus 0.4 inches (1.0 cm) for each 1 kv over 50 kv	2 times the length of the line insulator, but never less than 10 feet (3.1 m)

Exception to paragraph (f)(6): Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has deenergized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

(f)(7) Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees and sub-contractors selected for such work by the competent person.

(f)(8) Employees and sub-contractors shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

(f)(9) Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

(f)(10) Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.

(f)(11) Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.

(f)(12) Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees and sub-contractors to be on the scaffold and those employees and sub-contractors are protected by a personal fall arrest system or wind screens. Windscreens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

(f)(13) Debris shall not be allowed to accumulate on platforms.

(f)(14) Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees and sub-contractors.

(f)(15) Ladders shall not be used on scaffolds to increase the working level height of employees and sub-contractors, except on large area scaffolds where employers have satisfied the following criteria:

(i) When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder.

(ii) The platform units shall be secured to the scaffold to prevent their movement.

(iii) The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection, and

(iv) The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

(f)(16) Platforms shall not deflect more than 1/60 of the span when loaded.

(f)(17) To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:

(i) An insulated thimble shall be used to attach each suspension wire rope to its hanging support (such as cornice hook or outrigger). Excess suspension wire rope and any additional independent lines from grounding shall be insulated.

(ii) The suspension wire rope shall be covered with insulating material extending at least 4 feet (1.2 m) above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so that it does not become grounded.

(iii) Each hoist shall be covered with insulated protective covers.

(iv) In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure. The size of this conductor shall be at least the size of the welding process work lead, and this conductor shall not be in series with the welding process or the work piece.

(v) If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off. and

(vi) An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

Fall Protection

(g)(1) Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level. Paragraphs (g)(1)(i) through (vii) of this section establish the types of fall protection to be provided to the employees on each type of scaffold. Paragraph (g)(2) of this section addresses fall protection for scaffold erectors and dismantlers.

Note to paragraph (g)(1): The fall protection requirements for employees installing suspension scaffold support systems on floors, roofs, and other elevated surfaces are set forth in subpart M of this part.

(i) Each employee on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system.

(ii) Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system.

(iii) Each employee on a crawling board (chicken ladder) shall be protected by a personal fall arrest system, a guardrail system (with minimum 200 pound toprail capacity), or by a three-fourth inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board.

(iv) Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by ropes.

(v) Each employee on a walkway located within a scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) installed within 91/2 inches (24.1 cm) of and along at least one side of the walkway.

(vi) Each employee performing overhand bricklaying operations from a supported scaffold shall be protected from falling from all open sides and ends of the scaffold (except at the side next to the wall being laid) by the use of a personal fall arrest system or guardrail system (with minimum 200 pound toprail capacity).

(vii) For all scaffolds not otherwise specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section, each employee shall be protected by the use of personal fall arrest systems or guardrail systems meeting the requirements of paragraph (g)(4) of this section.

(g)(2) Effective September 2, 1997, the employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Employers are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

(g)(3) In addition to meeting the requirements of §1926.502(d), personal fall arrest systems used on scaffolds shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

(i) When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.

(ii) When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.

(iii) When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.

(iv) Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

(g)(4) Guardrail systems installed to meet the requirements of this section shall comply with the following provisions (guardrail systems built in accordance with Appendix A to this subpart will be deemed to meet the requirements of paragraphs (g)(4) (vii), (viii), and (ix) of this section):

(i) Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.

(ii) The top edge height of toprails or equivalent member on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above the platform surface. The top edge height on supported scaffolds manufactured and placed in service before January 1, 2000, and on

all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches (0.9 m) and 45 inches (1.2 m). When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of paragraph (g)(4).

(iii) When midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.

(iv) When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

(v) When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.

(vi) When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches (48 cm) apart.

(viii) Each toprail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 100 pounds (445 n) for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds (890 n) for guardrail systems installed on all other scaffolds.

(ix) When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section.

(x) Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 75 pounds (333 n) for guardrail systems with a minimum 100 pound toprail capacity, and at least 150 pounds (666 n) for guardrail systems with a minimum 200 pound toprail capacity.

(xi) Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.

(xii) Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

(xiii) The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.

(xiv) Steel or plastic banding shall not be used as a toprail or midrail.

(xv) Manila or plastic (or other synthetic) rope being used for toprails or midrails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the strength requirements of paragraph (g) of this section.

(xvi) Crossbracing is acceptable in place of a midrail when the crossing point of two braces is between 20 inches (0.5 m) and 30 inches (0.8 m) above the work platform or as a toprail when the crossing point of two braces is between 38 inches (0.97 m) and 48 inches (1.3 m) above the work platform. The end points at each upright shall be no more than 48 inches (1.3 m) apart.

Falling object protection

(h)(1) In addition to wearing hardhats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects

away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.

(h)(2) Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

(i) The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area. Or

(ii) A toeboard shall be erected along the edge of platforms more than 10 feet (3.1 m) above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of 3/4 x 11/2 inch (2 x 4 cm) wood or equivalent may be used in lieu of toeboards.

(iii) Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below. Or

(iv) A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects. Or

(v) A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

(h)(3) Canopies, when used for falling object protection, shall comply with the following criteria:

(i) Canopies shall be installed between the falling object hazard and the employees.

(ii) When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.

(iii) Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

(h)(4) Where used, toeboards shall be:

(i) Capable of withstanding, without failure, a force of at least 50 pounds (222 n) applied in any downward or horizontal direction at any point along the toeboard (toeboards built in accordance with Appendix A to this subpart will be deemed to meet this requirement).

(ii) At least three and one-half inches (9 cm) high from the top edge of the toeboard to the level of the walking/working surface. Toeboards shall be securely fastened in place at the outermost edge of the platform and have not more than 1/4 inch (0.7 cm) clearance above the walking/working surface. Toeboards shall be solid or with openings not over one inch (2.5 cm) in the greatest dimension.

1926.452 Additional requirements applicable to specific types of scaffolds

In addition to the applicable requirements of §1926.451, the following requirements apply to the specific types of scaffolds indicated. Scaffolds not specifically addressed by §1926.452, such as but not limited to systems scaffolds, must meet the requirements of §1926.451.

(a) Pole scaffolds

- When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced, prior to receiving the new platforms.
- Crossbracing shall be installed between the inner and outer sets of poles on double pole scaffolds.
- Diagonal bracing in both directions shall be installed across the entire inside face of double-pole scaffolds used to support loads equivalent to a uniformly distributed load of 50 pounds (222 kg) or more per square foot (929 square cm).
- Diagonal bracing in both directions shall be installed across the entire outside face of all double- and single-pole scaffolds.
- Runners and bearers shall be installed on edge.
- Bearers shall extend a minimum of 3 inches (7.6 cm) over the outside edges of runners.
- Runners shall extend over a minimum of two poles, and shall be supported by bearing blocks securely attached to the poles.
- Braces, bearers, and runners shall not be spliced between poles.
- Where wooden poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides, and shall extend at least 2 feet (0.6 m) on either side of the splice, overlap the abutted ends equally, and have at least the same cross-sectional areas as the pole. Splice plates of other materials of equivalent strength may be used.
- Pole scaffolds over 60 feet in height shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with that design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with design and loading requirements for pole scaffolds under 60 feet in height.

(b) Tube and coupler scaffolds

- When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced prior to receiving the new platforms.
- Transverse bracing forming an ``X'' across the width of the scaffold shall be installed at the scaffold ends and at least at every third set of posts horizontally (measured from only one end) and every fourth runner vertically. Bracing shall extend diagonally from the inner or outer posts or runners upward to the next outer or inner posts or runners. Building ties shall be installed at the bearer levels between the transverse bracing and shall conform to the requirements of §1926.451(c)(1).
- On straight run scaffolds, longitudinal bracing across the inner and outer rows of posts shall be installed diagonally in both directions, and shall extend from the base of the end posts upward to the top of the scaffold at approximately a 45 degree angle. On scaffolds whose length is greater than their height, such bracing shall be repeated beginning at least at every fifth post. On scaffolds whose length is less than their height, such bracing shall be installed from the base of the end posts upward to the opposite end posts, and then in alternating directions until reaching the top of the scaffold. Bracing shall be installed as close as possible to the intersection of the bearer and post or runner and post.

- Where conditions preclude the attachment of bracing to posts, bracing shall be attached to the runners as close to the post as possible.
- Bearers shall be installed transversely between posts, and when coupled to the posts, shall have the inboard coupler bear directly on the runner coupler. When the bearers are coupled to the runners, the couplers shall be as close to the posts as possible.
- Bearers shall extend beyond the posts and runners, and shall provide full contact with the coupler.
- Runners shall be installed along the length of the scaffold, located on both the inside and outside posts at level heights (when tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outside runners).
- Runners shall be interlocked on straight runs to form continuous lengths, and shall be coupled to each post. The bottom runners and bearers shall be located as close to the base as possible.
- Couplers shall be of a structural metal, such as drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.
- Tube and coupler scaffolds over 125 feet in height shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with design and loading requirements for tube and coupler scaffolds under 125 feet in height.

(c) Fabricated frame scaffolds (tubular welded frame scaffolds)

- When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.
- Frames and panels shall be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections shall be secured.
- Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.
- Where uplift can occur which would displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means.
- Brackets used to support cantilevered loads shall:
  - (i) Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames.
  - (ii) Not be bent or twisted from these positions. and
  - (iii) Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold.
- Scaffolds over 125 feet (38.0 m) in height above their base plates shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design.

(d) Plasterers', decorators', and large area scaffolds. Scaffolds shall be constructed in accordance with paragraphs (a), (b), or (c) of this section, as appropriate.

(e) Bricklayers' square scaffolds (squares)

- Scaffolds made of wood shall be reinforced with gussets on both sides of each corner.
- Diagonal braces shall be installed on all sides of each square.

- Diagonal braces shall be installed between squares on the rear and front sides of the scaffold, and shall extend from the bottom of each square to the top of the next square.
- Scaffolds shall not exceed three tiers in height, and shall be so constructed and arranged that one square rests directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier, and shall be nailed down or otherwise secured to prevent displacement.

(f) Horse scaffolds

- Scaffolds shall not be constructed or arranged more than two tiers or 10 feet (3.0 m) in height, whichever is less.
- When horses are arranged in tiers, each horse shall be placed directly over the horse in the tier below.
- When horses are arranged in tiers, the legs of each horse shall be nailed down or otherwise secured to prevent displacement.
- When horses are arranged in tiers, each tier shall be crossbraced.

(g) Form scaffolds and carpenters' bracket scaffolds

- Each bracket, except those for wooden bracket-form scaffolds, shall be attached to the supporting formwork or structure by means of one or more of the following: nails. a metal stud attachment device. Welding or hooking over a secured structural supporting member, with the form wales either bolted to the form or secured by snap ties or tie bolts extending through the form and securely anchored. or, for carpenters' bracket scaffolds only, by a bolt extending through to the opposite side of the structure's wall.
- Wooden bracket-form scaffolds shall be an integral part of the form panel.
- Folding type metal brackets, when extended for use, shall be either bolted or secured with a locking-type pin.

(h) Roof bracket scaffolds

- Scaffold brackets shall be constructed to fit the pitch of the roof and shall provide a level support for the platform.
- Brackets (including those provided with pointed metal projections) shall be anchored in place by nails unless it is impractical to use nails. When nails are not used, brackets shall be secured in place with first-grade manila rope of at least three-fourth inch (1.9 cm) diameter, or equivalent.

(i) Outrigger scaffolds

- The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of anchorage, shall be not less than one and one-half times the outboard end in length.
- Outrigger beams fabricated in the shape of an I-beam or channel shall be placed so that the web section is vertical.
- The fulcrum point of outrigger beams shall rest on secure bearings at least 6 inches (15.2 cm) in each horizontal dimension.
- Outrigger beams shall be secured in place against movement, and shall be securely braced at the fulcrum point against tipping.
- The inboard ends of outrigger beams shall be securely anchored either by means of braced struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both.
- The entire supporting structure shall be securely braced to prevent any horizontal movement.

- To prevent their displacement, platform units shall be nailed, bolted, or otherwise secured to outriggers.
- Scaffolds and scaffold components shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

(j) Pump jack scaffolds

- Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive gripping mechanisms to prevent any failure or slippage.
- Poles shall be secured to the structure by rigid triangular bracing or equivalent at the bottom, top, and other points as necessary. When the pump jack has to pass bracing already installed, an additional brace shall be installed approximately 4 feet (1.2 m) above the brace to be passed, and shall be left in place until the pump jack has been moved and the original brace reinstalled.
- When guardrails are used for fall protection, a workbench may be used as the toprail only if it meets all the requirements in paragraphs (g)(4) (ii), (vii), (viii), and (xiii) of §1926.451.
- Work benches shall not be used as scaffold platforms.
- When poles are made of wood, the pole lumber shall be straight-grained, free of shakes, large loose or dead knots, and other defects, which might impair strength.
- When wood poles are constructed of two continuous lengths, they shall be joined together with the seam parallel to the bracket.
- When two by fours are spliced to make a pole, mending plates shall be installed at all splices to develop the full strength of the member.

(k) Ladder jack scaffolds

- Platforms shall not exceed a height of 20 feet (6.1 m).
- All ladders used to support ladder jack scaffolds shall meet the requirements of subpart X of this part-Stairways and Ladders, except that job-made ladders shall not be used to support ladder jack scaffolds.
- The ladder jack shall be so designed and constructed that it will bear on the side rails and ladder rungs or on the ladder rungs alone. If bearing on rungs only, the bearing area shall include a length of at least 10 inches (25.4 cm) on each rung.
- Ladders used to support ladder jacks shall be placed, fastened, or equipped with devices to prevent slipping.
- Scaffold platforms shall not be bridged one to another.

(l) Window jack scaffolds

- Scaffolds shall be securely attached to the window opening.
- Scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.
- Window jacks shall not be used to support planks placed between one window jack and another, or for other elements of scaffolding.

(m) Crawling boards (chicken ladders)

- Crawling boards shall extend from the roof peak to the eaves when used in connection with roof construction, repair, or maintenance.
- Crawling boards shall be secured to the roof by ridge hooks or by means that meet equivalent criteria (e.g., strength and durability).

(n) Step, platform, and trestle ladder scaffolds

- Scaffold platforms shall not be placed any higher than the second highest rung or step of the ladder supporting the platform.
- All ladders used in conjunction with step, platform and trestle ladder scaffolds shall meet the pertinent requirements of subpart X of this part-Stairways and Ladders, except that job-made ladders shall not be used to support such scaffolds.
- Ladders used to support step, platform, and trestle ladder scaffolds shall be placed, fastened, or equipped with devices to prevent slipping.
- Scaffolds shall not be bridged one to another.

(o) Single-point adjustable suspension scaffolds

- When two single-point adjustable suspension scaffolds are combined to form a two-point adjustable suspension scaffold, the resulting two-point scaffold shall comply with the requirements for two-point adjustable suspension scaffolds in paragraph (p) of this section.
- The supporting rope between the scaffold and the suspension device shall be kept vertical unless all of the following conditions are met:
  - (i) The rigging has been designed by a qualified person, and
  - (ii) The scaffold is accessible to rescuers, and
  - (iii) The supporting rope is protected to ensure that it will not chafe at any point where a change in direction occurs, and
  - (iv) The scaffold is positioned so that swinging cannot bring the scaffold into contact with another surface.
- Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly ``eye-spliced'' minimum five-eighth (5/8) inch (1.6 cm) diameter first-grade manila rope, or other rope which will satisfy the criteria (e.g., strength and durability) of manila rope.
- Boatswains' chair seat slings shall be reeved through four corner holes in the seat. shall cross each other on the underside of the seat. and shall be rigged so as to prevent slippage which could cause an out-of-level condition.
- Boatswains' chair seat slings shall be a minimum of five-eight (5/8) inch (1.6 cm) diameter fiber, synthetic, or other rope which will satisfy the criteria (e.g., strength, slip resistance, durability, etc.) of first grade manila rope.
- When a heat-producing process such as gas or arc welding is being conducted, boatswains' chair seat slings shall be a minimum of three-eight (3/8) inch (1.0 cm) wire rope.
- Non-cross-laminated wood boatswains' chairs shall be reinforced on their underside by cleats securely fastened to prevent the board from splitting.

(p) Two-point adjustable suspension scaffolds (swing stages). The following requirements do not apply to two-point adjustable suspension scaffolds used as masons' or stonesetters' scaffolds. Such scaffolds are covered by paragraph (q) of this section.

- Platforms shall not be more than 36 inches (0.9 m) wide unless designed by a qualified person to prevent unstable conditions.
- The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means, which satisfy the requirements of §1926.451(a).
- The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.
- Platforms shall be of the ladder-type, plank-type, beam-type, or light-metal type. Light metal-type platforms having a rated capacity of 750 pounds or less and platforms 40 feet

(12.2 m) or less in length shall be tested and listed by a nationally recognized testing laboratory.

- Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.
- Passage may be made from one platform to another only when the platforms are at the same height, are abutting, and walk-through stirrups specifically designed for this purpose are used.

(q) Multi-point adjustable suspension scaffolds, stonesetters' multi-point adjustable suspension scaffolds, and masons' multi-point adjustable suspension scaffolds.

- When two or more scaffolds are used they shall not be bridged one to another unless they are designed to be bridged, the bridge connections are articulated, and the hoists are properly sized.
- If bridges are not used, passage may be made from one platform to another only when the platforms are at the same height and are abutting.
- Scaffolds shall be suspended from metal outriggers, brackets, wire rope slings, hooks, or means that meet equivalent criteria (e.g., strength, durability).

(r) Catenary scaffolds

- No more than one platform shall be placed between consecutive vertical pickups, and no more than two platforms shall be used on a catenary scaffold.
- Platforms supported by wire ropes shall have hook-shaped stops on each end of the platforms to prevent them from slipping off the wire ropes. These hooks shall be so placed that they will prevent the platform from falling if one of the horizontal wire ropes breaks.
- Wire ropes shall not be tightened to the extent that the application of a scaffold load will overstress them.
- Wire ropes shall be continuous and without splices between anchors.

(s) Float (ship) scaffold

- The platform shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 inches (15.2 cm) beyond the platform on both sides. Each bearer shall be securely fastened to the platform.
- Rope connections shall be such that the platform cannot shift or slip.
- When only two ropes are used with each float:
  - (i) They shall be arranged so as to provide four ends, which are securely fastened to overhead supports.
  - (ii) Each supporting rope shall be hitched around one end of the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(t) Interior hung scaffolds.

- Scaffolds shall be suspended only from the roof structure or other structural member such as ceiling beams.
- Overhead supporting members (roof structure, ceiling beams, or other structural members) shall be inspected and checked for strength before the scaffold is erected.
- Suspension ropes and cables shall be connected to the overhead supporting members by shackles, clips, thimbles, or other means that meet equivalent criteria (e.g., strength, durability).

(u) Needle beam scaffolds

- Scaffold support beams shall be installed on edge.
- Ropes or hangers shall be used for supports, except that one end of a needle beam scaffold may be supported by a permanent structural member.
- The ropes shall be securely attached to the needle beams.
- The support connection shall be arranged so as to prevent the needle beam from rolling or becoming displaced.
- Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.

(v) Multi-level suspended scaffolds

- Scaffolds shall be equipped with additional independent support lines, equal in number to the number of points supported, and of equivalent strength to the suspension ropes, and rigged to support the scaffold in the event the suspension rope(s) fail.
- Independent support lines and suspension ropes shall not be attached to the same points of anchorage.
- Supports for platforms shall be attached directly to the support stirrup and not to any other platform.

(w) Mobile scaffolds

- Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.
  - (i) Scaffolds constructed of tube and coupler components shall also comply with the requirements of paragraph (b) of this section.
  - (ii) Scaffolds constructed of fabricated frame components shall also comply with the requirements of paragraph (c) of this section.
- Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.
- Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet (1.5 m) above the supporting surface.
- Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.
- Scaffolds shall be stabilized to prevent tipping during movement.
- Employees shall not be allowed to ride on scaffolds unless the following conditions exist:
  - The surface on which the scaffold is being moved is within 3 degrees of level, and free of pits, holes, and obstructions.
  - The height to base width ratio of the scaffold during movement is two to one or less, unless the scaffold is designed and constructed to meet or exceed nationally recognized stability test requirements such as those listed in paragraph (x) of Appendix A to this subpart (ANSI/SIA A92.5 and A92.6).
  - Outrigger frames, when used, are installed on both sides of the scaffold.
  - When power systems are used, the propelling force is applied directly to the wheels, and does not produce a speed in excess of 1 foot per second (.3 mps). And
  - No employee is on any part of the scaffold, which extends outward beyond the wheels, casters, or other supports.
- Platforms shall not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

- Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used.
- Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws.
- Before a scaffold is moved, each employee on the scaffold shall be made aware of the move.

(x) Repair bracket scaffolds

- Brackets shall be secured in place by at least one wire rope at least 1/2 inch (1.27 cm) in diameter.
- Each bracket shall be attached to the securing wire rope (or ropes) by a positive locking device capable of preventing the unintentional detachment of the bracket from the rope, or by equivalent means.
- Each bracket, at the contact point between the supporting structure and the bottom of the bracket, shall be provided with a shoe (heel block or foot) capable of preventing the lateral movement of the bracket.
- Platforms shall be secured to the brackets in a manner that will prevent the separation of the platforms from the brackets and the movement of the platforms or the brackets on a completed scaffold.
- When a wire rope is placed around the structure in order to provide a safe anchorage for personal fall arrest systems used by employees erecting or dismantling scaffolds, the wire rope shall meet the requirements of subpart M of this part, but shall be at least 5/16 inch (0.8 cm) in diameter.
- Each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be protected from damage due to contact with edges, corners, protrusions, or other discontinuities of the supporting structure or scaffold components.
- Tensioning of each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be by means of a turnbuckle at least 1 inch (2.54 cm) in diameter, or by equivalent means.
- Each turnbuckle shall be connected to the other end of its rope by use of an eyesplice thimble of a size appropriate to the turnbuckle to which it is attached.
- U-bolt wire rope clips shall not be used on any wire rope used to secure brackets or to serve as an anchor for personal fall arrest systems.
- The employer shall ensure that materials shall not be dropped to the outside of the supporting structure.
- Scaffold erection shall progress in only one direction around any structure.

(y) Stilts. Stilts, when used, shall be used in accordance with the following requirements:

- An employee may wear stilts on a scaffold only if it is a large area scaffold.
- When an employee is using stilts on a large area scaffold where a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height of the stilts being used by the employee.
- Surfaces on which stilts are used shall be flat and free of pits, holes and obstructions, such as debris, as well as other tripping and falling hazards.
- Stilts shall be properly maintained. Any alteration of the original equipment shall be approved by the manufacturer.

1926.453 Aerial lifts

(a) General requirements

- Unless otherwise provided in this section, aerial lifts acquired for use on or after January 22, 1973 shall be designed and constructed in conformance with the applicable requirements of the American National Standards for ``Vehicle Mounted Elevating and Rotating Work Platforms,'' ANSI A92.2-1969, including appendix. Aerial lifts acquired before January 22, 1973 which do not meet the requirements of ANSI A92.2-1969, may not be used after January 1, 1976, unless they shall have been modified so as to conform with the applicable design and construction requirements of ANSI A92.2-1969. Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job-sites above ground:
  - (i) Extensible boom platforms.
  - (ii) Aerial ladders.
  - (iii) Articulating boom platforms.
  - (iv) Vertical towers. and
  - (v) A combination of any such devices. Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material. may be powered or manually operated. and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.
- Aerial lifts may be ``field modified'' for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and this section and to be at least as safe as the equipment was before modification.

(b) Specific requirements.

- Ladder trucks and tower trucks. Aerial ladders shall be secured in the lower traveling position by the locking device on top of the truck cab, and the manually operated device at the base of the ladder before the truck is moved for highway travel.
- Extensible and articulating boom platforms.
  - (i) Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.
  - (ii) Only authorized persons shall operate an aerial lift.
  - (iii) Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.
  - (iv) Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
  - (v) A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.
    Note to paragraph(b)(2)(v): As of January 1, 1998, subpart M of this part (1926.502(d)) provides that body belts are not acceptable as part of a personal fall arrest system. The use of a body belt in a tethering system or in a restraint system is acceptable and is regulated under 1926.502(e).
  - (vi) Boom and basket load limits specified by the manufacturer shall not be exceeded.
  - (vii) The brakes shall be set and when outriggers are used, they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline, provided they can be safely installed.

(viii) An aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment, which is specifically designed for this type of operation in accordance with the provisions of paragraphs (a) (1) and (2) of this section.

(ix) Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

(x) Climbers shall not be worn while performing work from an aerial lift.

(xi) The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.

(xii) Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position except as provided in paragraph (b)(2)(viii) of this section.

- Electrical tests. All electrical tests shall conform to the requirements of ANSI A92.2-1969 section 5. However equivalent d.c. voltage tests may be used in lieu of the a.c. voltage specified in A92.2-1969. d.c. voltage tests which are approved by the equipment manufacturer or equivalent entity shall be considered an equivalent test for the purpose of this paragraph (b)(3).
- Bursting safety factor. The provisions of the American National Standards Institute standard ANSI A92.2-1969, section 4.9 Bursting Safety Factor shall apply to all critical hydraulic and pneumatic components. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of at least 2 to 1.
- Welding standards. All welding shall conform to the following standards as applicable:
  (i) Standard Qualification Procedure, AWS B3.0-41.
  (ii) Recommended Practices for Automotive Welding Design, AWS D8.4-61.
  (iii) Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9-69.
  (iv) Specifications for Welding Highway and Railway Bridges, AWS D2.0-69.

Note to §1926.453: Non-mandatory Appendix C to this subpart lists examples of national consensus standards that are considered to provide employee protection equivalent to provided through the application of ANSI A92.2-1969, where appropriate. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the American National Standards Institute. Copies may be inspected at the Docket Office, Occupational Safety and Health Administration, U.S. Department of Labor, 200 Constitution Avenue, NW, room N2634, Washington, DC or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

1926.454 Training requirements

This section supplements and clarifies the requirements of §1926.21(b)(2) as these relate to the hazards of work on scaffolds.

(a) The employer shall have each employee who performs work while on a scaffold trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:

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

(b) The employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

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

(c) When the employer has reason to believe that an employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, the employer shall retrain each such employee so that the requisite proficiency is regained. Retraining is required in at least the following situations:

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

Prohibited Practices

The following practices will never be tolerated in this company:

- Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
- Unstable objects will never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- Crossbraces will never be used as a means of access.
- The use of shore or lean-to scaffolds is prohibited.
- Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
- Unstable objects will never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- Crossbraces will never be used as a means of access.
- The use of shore or lean-to scaffolds is prohibited.

Qualified/Competent Person

- Scaffolds must be designed by a qualified person and shall be constructed and loaded in accordance with that design.
- Swaged attachments or spliced eyes on wire suspension ropes of suspension scaffolds will not be used unless they are made by the wire rope manufacturer or a qualified person.
- We will have each employee who performs work while on a scaffold trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.
- We will not intermix scaffold components manufactured by different manufacturers unless the components fit together without force and the scaffold's structural integrity is maintained. Scaffold components manufactured by different manufacturers will not be modified in order to intermix them unless our competent person determines the resulting scaffold is structurally sound.
- Before a suspension scaffold is used, direct connections must be evaluated by our competent person who will confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed.
- Prior to each workshift and after every occurrence, which could affect a rope's integrity, suspension scaffold ropes will be inspected by our competent person. Ropes will be replaced if any of the conditions outlined in 1926.451(d)(10) exist.
- Scaffolds will be erected, moved, dismantled, or altered only under the supervision and direction of a competent person.

Appendix B – Scaffolding Safety Checklist

COMPLETE THE FOLLOWING INFORMATION FOR EACH WORKSITE

This checklist describes the worksite located at:

Worksite Name/Location: _____

Address: _____

What is the type of scaffold being erected/used?

_____

_____

What type of planking is used?

_____

_____

What fall protection systems are used?

_____

_____

IF CONDUCTING DAILY INSPECTION:

The condition of the scaffolding is in good condition _____ or needs attention _____

Comments:_____

Corrective Action Taken: _____

_____

_____

_____

Job Superintendent/Competent Person Date

Definitions and Tips on Conducting the Inspection

- Requirements for ensuring scaffolding safety include:
  - Weight of workers, tools, materials, and equipment.
  - Site conditions and variations in elevation.
  - Height of finished scaffold.
  - Type of work and how long it will be used.
  - Amount of pedestrian traffic expected.
  - Configuration of the building.

- Maximum intended load: The total weight of all workers, equipment, tools and materials that can be reasonably be expected to be on a scaffold at any one time.

- Rated load: the maximum load that can be lifted by an adjustable suspension scaffold hoist or supported by a scaffold or it components.

- If a supported scaffold is more than 4 times as high as the base width, it must be tied down.
- Inspection Checklist

  - Look for rust.
  - Check for damaged or cracked welds.
  - Locking devices and braces should be in good working condition.
  - All components should be straight and free of kinks or bends.
  - Crossbracing should be straight and have center pivot in place.
  - Casters should be in good condition with working braces.
  - Guardrails should be in good repair with all components in place.

- Requirements for ensuring worker safety

  - Crossbracing cannot be used for access.
  - Bottom rung of hook on ladder cannot be more than 24 inches above support level.
  - Side rail should extend at least 3 feet above the surface.

General use guidelines

- Do not overload a scaffold.

- Never move a scaffold horizontally while a worker is on it unless it is specifically designed to do so.

- Make sure the scaffold is away from energized power lines. Follow the clearance distances listed in the regulation and never closer than 10 feet, unless de-energized or protected.

- Never work on a scaffold that is covered with slippery materials.

- Use a tag line when hoisting a swinging load onto or near scaffold.
- Do not work on a scaffold during a storm or high wind unless a competent person has determined that it is safe for you to do so.
- Do not allow debris to accumulate on the work platform.
- Never use boxes or barrels to increase your working height.
- Guardrails must be 38-45 inches and must support 200 pounds.
- Anyone who works on a scaffold must be trained.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 119 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Scissor Lift Program

Purpose
To train and authorize the employees of Newkirk Novak in the safe operating practices and procedures of aerial scissor lifts. This program is meant to apply only to lifts that elevate straight up and straight down (non-articulating lifts).

Scope
All employees operating aerial scissor lifts

Responsibilities
The Superintendent shall be responsible for establishment and implementation of the program. The Superintendent is responsible for ensuring this written program is followed while their employees operate scissor lifts.

Special Definitions

Procedure
1.0 ESTABLISH A WRITTEN PROGRAM

- **1.1** The Subcontractor will designate those employees who will be authorized to operate scissor lifts after completing the required training and certification.
- **1.2** Safety training, testing, and monitoring of employees designated by the Subcontractor to operate scissor lifts shall comply with recognized safety standards.
- **1.3** Personnel suspected of substance abuse will not be selected for this program.
- **1.4** A training log shall be maintained designating those persons authorized and trained to operate scissor lifts at Newkirk Novak.

2.0 LICENSING/CERTIFICATION

- **2.1** Employee(s) will be trained on the safe operation and characteristics of the scissor lifts. Employee(s) shall not be authorized or permitted to operate any scissor lift, at this facility, unless he/she is first trained on safe operation of the lift.
- **2.2** Authorization to operate a scissor lifts at our facility may be revoked at any time for an infraction of the safety rules for scissor lifts.

3.0 TRAINING

- **3.1** The Subcontractor shall conduct training as needed.

3.2 Training shall be held on-site using the equipment supplied and utilized within the organization or plant. Training shall consist of a lecture, discussion of safety topics listed below, and a DVD presentation.

4.0 REVIEW

4.1 A review of each scissor lift, covering;
- **4.1.1** Operating instructions of each vehicle listed
- **4.1.2** Applicable warnings and precautions specific to each vehicle listed
- **4.1.3** Operations and purpose of scissor lift controls and instrumentation covering their locations, what they do and how they work and the inherent stability of the lift.

4.2 Engine and motor operation of each scissor lift, specifically identifying differences and characteristics of (1) - LP Gas, (2) - Gasoline, (3) - Diesel, and (4) - electric power.

4.3 Steering and maneuvering systems specific to the scissor lift

4.4 Operating limitations of each scissor lift.

4.5 Specific workplace environment of our facility, such as;
- **4.5.1** Material storage and placement
- **4.5.2** Narrow aisles
- **4.5.3** Restricted areas
- **4.5.4** Ramps and sloped surfaces
- **4.5.5** Unique workplace hazards specific to our facility
- **4.5.6** Surfaces within and specific to our facility

5.0 DISCUSSION TOPICS

5.1 Only lifts approved for the atmosphere shall be used in areas designated as hazardous.

5.2 Refueling of Scissor lifts whether (1) - LP, (2) - Gasoline, (3) - Diesel, (4) - Electric, fuel handling will only be accomplished with a fire extinguisher readily available and the lift's engine shut off.

5.3 Batteries will only be charged in an approved battery charging area.

5.4 Batteries will only be changed with the use of material handling equipment.

5.5 Acid will be poured into water, not water into acid when charging or maintaining batteries.

5.6 The lift shall be properly positioned and brakes set when changing batteries.

5.7 Smoking in the battery charging area shall be prohibited.

5.8 Keep tools or other metal objects away from the posts on the battery.

5.9 The lift shall be inspected at the beginning of each shift for mechanical defects and malfunctioning safety equipment

5.10 Lifts shall not be driven toward another employee.

5.11 Traveling shall be accomplished with the platform at the lowest position

5.12 Detachable guard rails shall be put back in the proper place after entering the platform

5.13 No employee will pass near or under the elevated platform.

5.14 Only authorized drivers shall operate scissor lifts.

5.15 Arms and/or legs will not be permitted outside the running lines of the platform.

5.16 When leaving the scissor lift unattended, the platform will be lowered to resting position, gear placed in neutral, power shut off, and the brakes set.

5.17 The lift shall not be used to open doors or operate close to the edge of platforms.

5.18 Be alert to low ceiling and piping.

5.19 Personnel will not be elevated within the platform by use of scaffolds, ladders, stools, or by climbing on the guard rails.
5.20 Speed limits will be observed and a safe distance maintained between lifts.
5.21 Lifts traveling the same direction shall not pass.
5.22 The driver is required to slow down at intersections
5.23 Cross railroad tracks diagonally.
5.24 Grades shall be ascended or descended slowly.
5.25 Stunt driving or horseplay will not be permitted.
5.26 Any lift found to be in need of repair, defective, or in any way unsafe shall be immediately removed from service.

6.0 INSPECTION

6.1 The operator shall inspect the lift for safety and operational conditions and all safety guard(s) on and operational at the beginning of the shift.
6.2 The lift shall be inspected by maintenance personnel at least monthly with written records maintained of this inspection.

7.0 REFRESHER TRAINING

7.1 Each employee, authorized as a scissor lift operator, shall be retrained if:
7.1.1 The operator has been observed operating his/her scissor lift in an unsafe or hazardous manner.
7.1.2 When an operator has been involved in an accident or near-miss incident.
7.1.3 When an operator has been assigned to a different scissor lift he/she has not been trained and certified to operate.
7.1.4 When the workplace environment changes dictate the need

8.0 REVIEW

8.1 This program will be reviewed annually by the Operations Manager/Safety Director and updated as necessary.

Listing of Scissor lifts at our facility on _____

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

Make: _____ Model: _____
Year: _____
Serial Number: _____
Vehicle Dry (Empty) Weight: _____
Vehicle Load Capacity: _____
Vehicle Gross Weight (Loaded): _____
Engine Type: Gasoline: ___ LP: ___ Diesel: ___ Electric: ___ Other: ___
Steering System: Front Steering: ___ Rear Steering: ___ Articulating: ___ Modified: ___
Fire Extinguisher - Yes ___ No ___ Gas Gauge - Yes ___ No ___ Hour Meter - Yes ___ No ___

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 158-1 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Steel Erection

Policy
At Newkirk Novakthe safety of our employees and subcontractors is of the utmost consideration. Accidents and injuries are costly to the company, individuals, and families. We endeavor to provide a workplace free of recognized safety and health hazards for our employees and subcontractors. We take every reasonable measure to maintain the highest possible standards.

Responsibilities
Each steel erection job site has a controlling contractor. The controlling contractor along with the competent person will ensure that all equipment and safety systems meet required specifications for the intended application and are inspected and used as required.

Purpose
Newkirk Novak must meet the requirements of OSHA's Steel Erection standard (29 CFR 1926, Subpart R). This Steel Erection Plan for construction is our company's policy to protect our employees and subcontractors from the hazards associated with steel erection activities. Those activities could include: Hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing and rigging structural steel, steel joists, and metal buildings; Installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron, and similar materials; and moving point-to-point while performing these activities.

Procedure
1.0. SITE LAYOUT OVERVIEW

1.1. The controlling contractor shall ensure that the following is provided and maintained:

1.1.1. All written notifications must be on site (i.e. ASTM test methods for concrete).
1.1.2. Adequate access roads into and through the site for the safe delivery and movement of necessary equipment and methods for pedestrian and vehicular control.
1.1.3. See site specific erection plan attached.

2.0 PRE-SHIFT VISUAL INSPECTION OF CRANES

2.1 Cranes being used in steel erection activities shall be visually inspected prior to each shift by a competent person; the inspection shall also include observation for deficiencies during operation.

2.2 See CFR 1926.753 (c),(1),(i) for a checklist.

3.0 OVERHEAD HOISTING OPERATIONS

3.1 We are concerned for the safety of personnel that must work under or near loads. Before any suspended load is moved, pre-planning will be done confirming that the route is clear, except for:

3.1.1 Employees engaged in the initial connecting of steel, or

3.1.2 Personnel necessary for the hooking or unhooking the load.

3.2 When work under a suspended load is necessary, the following criteria must be met:

3.2.1 Materials being hoisted shall be rigged to prevent unintentional displacement;

3.2.2 Hooks with self-closing safety latches or their equivalent shall be used to prevent components from slipping out of the hook; and

3.2.3 All loads shall be rigged by a qualified rigger.

4.0 STRUCTURAL STEEL ASSEMBLY

4.1 Structural stability shall be maintained at all times during the erection process.

4.2 Permanent floors shall be installed as the erection process progresses, (no more than 8 stories between the erection floor and the upper most permanent floor).

4.3 At no time shall there be more than 4 floors of 48 ft whichever is less of unfinished bolting or welding above the foundation or uppermost permanently secured floor.

4.4 Assure that all Walking/working surfaces, are free of tripping hazards. Shear connectors (such as headed steel studs, steel bars or steel lugs), reinforcing bars, deformed anchors or threaded studs shall not be attached to the top flanges of beams, joists or beam attachments so that they project vertically from or horizontally across the top flange of the member until after the metal decking, or other walking/working surface, has been installed.

4.5 When shear connectors are used in construction of composite floors, roofs and bridge decks, employees shall lay out and install the shear connectors after the metal decking has been installed, using the metal decking as a working platform. Shear connector shall not be installed from within a controlled decking zone (CDZ).

4.6 When deemed necessary by a competent person, plumbing-up equipment shall be installed in conjunction with the steel erection process to ensure the stability of the structure.

4.7 Assure the proper hoisting, landing and placing of metal decking bundles. Metal decking bundles shall be landed on framing members so that enough support is provided to allow the bundles to be unbanded without dislodging the bundles from the supports.

5.0 COLUMN ANCHORAGE

5.1 All columns shall be anchored by 4 anchor rods (anchor bolts).

5.2 Columns shall be set on level finished floors.

5.3 All columns shall be evaluated by a competent person to determine if guying or bracing is needed.

5.4 Anchor rods (anchor bolts) shall not be repaired, replaced or field-modified without the approval of the project structural engineer of record.

6.0 BEAMS AND COLUMNS

6.1 The load shall not be released from the hoisting lines until at least 2 bolts per connection are wrench-tight.

6.2 A competent person shall determine if more than 2 bolts are need to ensure stability.

6.3 Diagonal bracing, shall be secured by at least 1 bolt per connection drawn up wrench-tight.

7.0 OPEN WEB STEEL JOIST

7.1 Vertical stabilizer plates shall be provided for each column of steel joist.

7.2 The bottom chords of steel joists shall be stabilized to prevent rotation during erection.

7.3 Hoisting cables shall not be released until the seat at each end of the steel joist is field bolted and each end of the bottom chord is restrained by the column stabilizer plate.

7.4 During the construction period, the competent placing a load on steel joists shall ensure that the load is distributed so as not to exceed the carrying capacity of any steel joist.

7.5 For joist installation see table A and B, CFR 1926.757.

8.0 SYSTEM – ENGINEERED METAL BUILDINGS

8.1 Each structural column shall be anchored by a minimum of 4 anchor rods (anchor bolts)

8.2 Rigid frames shall have at least 50% of their bolts installed.

8.3 Construction loads shall not be placed on any structural steel framework unless it is safely bolted, welded or otherwise adequately secured.

9.0 FALLING OBJECT PROTECTION

9.1 All materials, equipment, and tools, which are not in use while aloft, shall be secured against accidental displacement.

9.2 The controlling contractor shall bar other construction processes below steel erection unless overhead protection for the employees below is provided.

10.0 FALL PROTECTION

10.1 Each employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

10.2 Connectors shall be protected from fall hazards of more than two stories or 30 feet above a lower level, whichever is less.

10.3 On multi-story structures, perimeter safety cables shall be installed at the final interior and exterior perimeters of the floors as soon as the metal decking has been installed.

10.4 Controlled Decking Zone (CDZ) may be established in areas of the structure over 15 feet and up to 30 feet above a lower level where metal decking is initially installed and forms the leading edge of a work area.

11.0 TRAINING

11.1 Training must address the following. The recognition and identification of fall hazards. The use and operation of guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

11.2 Where Controlled Decking Zones (CDZs) are being used, the employer shall assure that each employee has been provided training in the nature of the hazards associated with work within a controlled decking zone; and the establishment, access, proper installation techniques and work practices.

SITE SPECIFIC STEEL ERECTION PLAN AND CHECKLIST

Site and Project Name:	
Controlling Contractor:	

Job Number:		Date:	
Project Engineer:		Erector:	
Fabricator:			

Scope

Pre-Engineered Metal Building	**YES**		**NO**	
Conventional Steel Building	**YES**		**NO**	
Decking	**YES**		**NO**	
Roofing	**YES**		**NO**	
Siding	**YES**		**NO**	
Other:				

Work Description:	

Pre-Construction Site Conference

Has a Pre-Construction Site Conference been held?	**YES**		**NO**	

List of those in Attendance:

Commencement of Steel Erection

1. Has concrete in the footings, piers and walls reached 75% of intended strength?	**YES**		**NO**	
2. Type of Verification:				
a. ASTM test	**YES**		**NO**	
b. Engineer verification	**YES**		**NO**	
3. Has the steel erector been notified in writing?	**YES**		**NO**	

Anchor Bolts

1. Have anchor bolts been repaired, replaced or field-modified?	**YES**		**NO**	
2. If yes, has the project structural engineer approved the repairs?	**YES**		**NO**	
3. Has the steel erector been notified in writing?	**YES**		**NO**	

Site Layout

1. Has controlling contractor provided adequate roads into and through the site?	**YES**		**NO**	
2. Is there a firm, properly graded, drained area readily accessible to the work?	**YES**		**NO**	

Sequence of Erection Activity

What is the sequence of erection activities? Include material delivery, material staging and storage and how activities will be coordinated with other trades and construction activities.

Cranes:

Give a description of the crane selection and placement procedures. Include site preparation, path for overhead loads and critical lifts including rigging supplies and equipment.

Steel Erection Activities and Procedures

Describe how the following processes will be performed.

Temporary Bracing and Guying	

Erection Bridging Terminus Point	

Anchor Bolt Notification of Repair Replacement and Modification	

Columns and Beams (including joists and purlins)	

Connections	

Decking	

Ornamental and Miscellaneous Iron	

Fall Protection

Identify the Fall Protection procedures for the following tasks: (**Circle which one**)

1. Erection of Vertical structural members	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

2. Erection Horizontal Structural Members	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

3. Installation of Siding & Insulation	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

4. Installation of Roofing & Insulation	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

5. Installation of Decking	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

6. Unprotected Sides / Edges	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

7. Leading Edges	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain
8. Holes	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

9. Wall Opening	Boom Lift / Tie-Off
	Scissor Lift / Guardrails
	Vertical Lifeline / Harness and Lanyard
	Retractable Lanyard / Harness
	Other – Explain

10. Has fall protection training been documented?	**YES**		**NO**	

11. Is a competent person on-site at all times?	**YES**		**NO**	

12. Were fall protection systems designed by a Qualified Person?	**YES**		**NO**	

Falling Object Protection

1. Describe how loose items aloft will be secured:				
2. Will other construction processes below steel erection been stopped?	**YES**		**NO**	
3. Are hardhats required for all personnel?	**YES**		**NO**	

Hazardous Non-Routine Tasks

Give a description of special procedures required for hazardous non-routine tasks.

Training Certification

1. Are all personnel trained and certified for performing steel erection activities?	**YES**		**NO**	
2. Are all personnel properly trained for the use of fall protection systems?	**YES**		**NO**	
3. Attach documentation of training.				

List of Qualified and Competent Persons

1. Qualified Person(s) for site specific erection plan:	
2. Qualified Person(s) for fall protection system design:	
3. Qualified Riggers:	
4. Crane Operators:	

5. Crane Inspectors:	
6. Fall Protection Competent Persons:	
7. Qualified Persons for Ladder Safety:	

Emergency Rescue Procedures

Give a description of the procedures that will be utilized in the event of rescue or emergency response.

Qualified person responsible for this forms preparation and modification: (Signature)	
Date:	

Qualified person responsible for this forms preparation and modification: (Signature)	
Date:	

Qualified person responsible for this forms preparation and modification: (Signature)	
Date:	

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 170 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Stop Work Authorization Program

Purpose
To ensure that all workers have the authority and responsibility to stop work when they perceive an imminent danger or hazardous condition, to assess the situation and take corrective action, and to prevent further work until the hazard is resolved. Training is provided to workers covering their role and responsibility to stop and report an unsafe act. No retribution or reprimand will be tolerated for stopping work when unsafe conditions are present.

Scope
This SOP applies to all workers, supervisors, and managers who work on-site or off-site.

Responsibilities
- Management is responsible for providing a safe and healthy work environment, including developing and enforcing the Stop Work Authorization Program.
- Supervisors are responsible for enforcing the Stop Work Authorization Program and ensuring that workers understand the importance and protocol of the program.
- Workers are responsible for complying with the Stop Work Authorization Program, immediately reporting any hazardous condition to their supervisor, and assisting in the assessment and corrective action process.

Special Definitions

Procedure
1.0 Stop work authority: All workers have the authority and responsibility to stop work if they perceive an imminent danger or hazardous condition. Workers will report the hazard to their supervisor immediately.

2.0 Assessment: The supervisor will assess the hazard, with the assistance of the worker, and determine if the work can continue safely. If the supervisor determines that the hazard can be immediately corrected, the work can continue once the corrective action is taken.

3.0 Corrective action: The supervisor, with the assistance of the worker, will take immediate corrective action to eliminate the hazard or to protect the workers from the hazard. If the hazard cannot be immediately corrected, the work will not continue until the hazard is resolved.

4.0 Notification: If work is stopped due to a hazardous condition, the supervisor will immediately notify all affected workers and management of the situation.

5.0 Documentation: All stop work incidents will be documented, including the hazard identified, the corrective action taken, and any follow-up actions required.

6.0 Review and follow-up: The Stop Work Safety Program will be reviewed periodically to ensure that it is effective and that workers understand the importance and protocol of the program. All stop work incidents will be followed up to ensure that the hazard is resolved and to identify opportunities for improvement.

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 162 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Subcontractor Safety Management Plan

Purpose
Newkirk Novak as an employer is responsible for providing a safe and healthful work environment for its employees. Contract work may present situations or conditions that may cause a negative impact on the safety and health of our company employees and subcontractors. This Subcontractor Management Plan is designed to protect Newkirk Novak and subcontractor employees and equipment from injury, accident or loss. Subcontractors are persons not directly employed by Newkirk Novak but who provide specific labor or services.

Scope
The program applies to all employees, management and subcontractors.

Procedure

1.0 SUBCONTRACTOR POLICY

1.1 It is essential that subcontractors understand Newkirk Novak expectations and requirements. Understanding and complying with Newkirk Novak safety requirements are critical in ensuring the health and safety of those involved.

2.0 REQUIREMENTS

2.1 Requirements are to ensure subcontractors interested in working for Newkirk Novak must submit adequate documentation related to the programs, plans, and training in order to comply with Newkirk Novak safety and health requirements.

2.2 As a condition of doing business with Newkirk Novak, all subcontractors must comply with applicable local, state, federal regulatory requirements and Newkirk Novak safety procedures and policies.

2.3 All subcontractors will be prequalified by Newkirk Novak by reviewing their safety programs, safety training documents, safety metrics, OSHA 300 logs and the answers to the completion of the Subcontractor Safety Qualification from.

3.0 SUBCONTRACTOR PREQUALIFICATION EVALUATION

3.1 Subcontractors are pre-qualified by reviewing their safety programs, safety training documents, and safety metrics.

3.2 For the purpose of this Safety Management Plan, Newkirk Novak uses the subcontractor's safety and health documentation, which includes but not limited to, OSHA logs, records and minutes of safety meetings, training documentation, safety metrics, incident rates, Emod rate.

3.3 Subcontractors that have been labeled "unsatisfactory" may be declined from submitting a bid.

4.0 COMPANY RESPONSIBILITES

4.1 At Newkirk Novak, all employees responsible for managing contracts will ensure that;

- **4.1.1** Each subcontractor is provided with warnings of hazards and information about our Company programs for mitigating hazards;
- **4.1.2** Each subcontractor is informed of our company's safety, health and environmental requirements; and
- **4.1.3** The work is conducted in a safe and responsible manner in compliance with applicable local, state, federal regulatory requirements.

4.2 Newkirk Novak contracts will ensure that the subcontractor is aware of the requirements to:

- **4.2.1** Meet all applicable local, state, federal regulatory requirements and the Company's requirements;
- **4.2.2** Provide their employees with the necessary training and/or safety equipment;
- **4.2.3** Submit a written safety and health plan;
- **4.2.4** Compliance with all applicable local, state, federal regulatory requirements and the Company's requirements with violation being grounds for default of contract.

4.3 All employees responsible for managing contracts will:

- **4.3.1** Communicate the environmental, health and safety requirements to the subcontractor prior to the start of the contract;
- **4.3.2** Ensure the subcontractor's safety plan is submitted with the bid.

4.4 The Safety Director/Operations Manager will:

- **4.4.1** Review the safety and health plan prior to meeting with the subcontractor;
- **4.4.2** Monitor the subcontractor's work performance to determine if the subcontractor is complying with all applicable local, state, federal regulatory requirements and the Company's requirements;
- **4.4.3** Immediately report all incidents and accidents and provide written documentation to Management;
- **4.4.4** Notify Management of any OSHA compliant and/or inspection of the subcontractor's jobsite.
- **4.4.5** Include the subcontractors in any safety meetings, job safety analysis, jobsite safety inspections, and any safety orientations prior to work being performed.

5.0 SUBCONTRACTOR'S RESPONSIBILITY

5.1 The subcontractor is responsible for providing a safe and healthy workplace for its employees.

5.2 The subcontractor must have a written safety and health program. The safety and health program, depending on the scope of their work, must address:

- **5.2.1** Safety Policy
- **5.2.2** Mitigating hazards
- **5.2.3** Employee orientation
- **5.2.4** Recordkeeping
- **5.2.5** Training
- **5.2.6** Disciplinary policy
- **5.2.7** Inspections/Audits
- **5.2.8** Emergency Action Plan

5.2.9 Hazard Communication Program
5.2.10 Fall Protection Plan
5.2.11 Accident and Injury Policy
5.2.12 Personal Protective Equipment
5.2.13 Any other policy relating to their scope of work.

5.3 Subcontractors are required to submit their site-specific safety plan prior to the pre-construction meeting.

5.4 Subcontractor's training may be maintained electronically and/or on site. These records must be available upon request.

5.5 The subcontractor must conduct a project specific safety orientation for all subcontractor employees who work on the project before the personnel are allowed to perform any work.

5.6 The subcontractor will review the various roles and responsibilities of personnel, provide an overview of the hazards and hazard control to potential exposures.

5.7 The subcontractor shall designate a compete person as defined by OSHA to implement the safety requirements. A competent person must be on site whenever they have employees working on site, the name of that person must be reported to the Superintendent.

5.8 The subcontractor will:

5.8.1 Provide frequent and regular inspections of the jobsites, materials and equipment;
5.8.2 Take immediate action to correct violations, unsafe practices and unsafe conditions;
5.8.3 Notify the Superintendent of any incidents or accidents immediately;
5.8.4 Each subcontractor is required to investigate all incident and accidents incurred by their employees, or incidents that are a results of their operations. They must provide written documentation of the incident within 24 hours of occurrence;
5.8.5 Notify the Superintendent of any OSHA complaints or OSHA inspections of the jobsite;
5.8.6 Identify and correct hazards;
5.8.7 Provide subcontractor employees with required personal protective equipment;
5.8.8 Ensure subcontractor employees have the proper training for their assigned tasks;
5.8.9 Hold safety meetings for their employees on the jobsite to communicate safe work practices;
5.8.10 Maintain and enforce their safety and health program;
5.8.11 Maintain and enforce housekeeping on the jobsite.

SUBCONTRACTOR SAFETY PREQUALIFICATION

SUBCONTRACTOR SAFETY MANAGEMENT PLAN

SUBCONTRACTOR NAME			
COMPLETED BY		**DATE**	

COMPANY INFORMATION	**PLEASE CIRCLE YES OR NO**
DO YOU HAVE A WRITTEN SAFETY PLAN AND CAN PROVIDE WHEN REQUESTED?	YES NO
DOES YOUR COMPANY PROVIDE SAFETY TRAINING FOR YOUR EMPLOYEES?	YES NO
WILL YOUR COMPANY PROVIDE COPIES OF TRAINING RECORDS IF REQUESTED?	YES NO
DO YOU PERFORM SAFETY SITE INSPECTIONS?	YES NO
DO YOU HAVE AN SAFETY ORIENTATION PROGRAM FOR NEW EMPLOYEES?	YES NO
DO YOU HOLD SITE SAFETY MEETINGS?	YES NO
DO YOU HAVE A PERSONAL PROTECTIVE EQUIPMENT PROGRAM IN PLACE?	YES NO
DOES YOUR COMPANY HAVE A SUBSTANCE ABUSE PROGRAM?	YES NO
DO YOU HAVE AN EMERGENCY ACTION PLAN IN PLACE FOR YOUR JOBSITES?	YES NO
DO YOU PERFORM JOB SAFETY ANALYSIS ON JOB SITE HAZARD ASSESSMENT?	YES NO
DO YOU HAVE AN ACCIDENT AND INCIDENT REPORTING PROCESS IN PLACE?	YES NO
OSHA INFORMATION	
HAVE YOU HAD ANY OSHA VIOLATIONS IN THE LAST 3 YEARS? IF YES, PLEASE ATTACH THE OUTCOME OF THE INSPECTION AND CITATIONS RECEIVED.	YES NO

PLEASE USE YOUR OSHA 300 LOGS TO FILL-IN THE NUMBER OF INJURIES AND ILLNESS IN THE LAST 3 YEARS

YEAR			
# OF CASES OF LOST TIME WORKDAYS			
# OF CASES OF RESTRICTED WORKDAYS			
# OF CASES OF OTHER RECORDABLES			
# OF CASES OF FATALITIES			

SUBCONTRACTOR SAFETY PREQUALIFICATION

YEAR THE PAST 3 YEARS	EXPERIENCE MODIFICATION FACTOR (EMOD)	INCIDENT RATE

**The Applicant must maintain records needed for this evaluation and make them available upon request.*

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 142 **Next Scheduled Review: 5/2024**
Implementation Date: 5/2023 **Revision Date:**

Title
Substance Abuse Program

Purpose
The purpose of this policy is to:

Establish and maintain a safe, healthy working environment for all employees

Ensure the reputation of the company and the employees within the community and industry at large

Reduce the number of accidental injuries to person or property

Reduce absenteeism and tardiness and improve productivity

Provide rehabilitation assistance for any employee who needs such help

Scope
This document applies to all employee

Responsibilities

Special Definitions

Procedure
1.0 The following rules represent the company policy concerning substance abuse. The rules will be enforced uniformly with respect to all employees, as indicated below:

- **1.1** All employees are prohibited from being under the influence of alcohol or illegal drugs during working hours.
- **1.2** The sale, possession, transfer or purchase of illegal drugs on company property or while performing company business is strictly prohibited. Such action will be reported to appropriate law enforcement officials.
- **1.3** The use, sale, or possession of an illegal drug or controlled substance while on duty is cause for termination.
- **1.4** Any employee who commits an unlawful act on or off company premises or whose conduct discredits or the employer in any way will be subject to discipline, including termination.
- **1.5** No alcoholic beverage will be brought or consumed on company premises

1.6 No prescription drug will be brought on company premises by any person other than the one for whom it is prescribed. Such drugs will be used only in the manner, combination and quantity prescribed.

1.7 Any employee whose off-duty abuse of alcohol or illegal or prescription drugs results in excessive absenteeism or tardiness or is the cause of accidents or poor work will be referred to an employee assistance program for rehabilitation and will face termination if he/she rejects that program.

1.8 For purposes of this rule, an alcoholic beverage is any beverage that may be legally sold and consumed and has an alcoholic content in excess of 3 % by volume.

1.9 Drug means any substance other than alcohol, capable of altering an individual's mood perception, pain level or judgment. Drug also means a prescription for individual consumption by a licensed medical practitioner. An illegal drug is any drug or controlled substance the sale or consumption of which is illegal.

2.0 NOTICE OF CIRCUMSTANCES WHICH WILL RESULT IN TESTING

2.1 Each employee will be tested for drugs and alcohol upon hire, if he/she has been observed using a prohibited substance on the job, if he/she exhibits a severe and prolonged reduction in productivity, or if the company has other reasonable cause for testing him/her. Post-accident drug screening will be conducted when reasonable suspicion exists.

3.0 NOTICE OF CIRCUMSTANCES WHICH MAY RESULT IN SEARCH

3.1 Every employee will be required, upon the company's request, to submit to a search of any vehicle brought on company premises, to submit to a search of any pocket, package, purse, briefcase, tool box, lunch box, or other container brought onto company premises and to submit to a search of a desk, file, locker, or other stationary container provided by the company.

SUBSTANCE ABUSE POLICY

The following rules represent the company policy concerning substance abuse. They are effective immediately and will be enforced uniformly with respect to all employees, as indicated.

1. All employees are prohibited from being under the influence of alcohol or illegal drugs during working hours.

2. The sale, possession, transfer or purchase of illegal drugs on company property or while performing company business is strictly prohibited. Such action will be reported to appropriate law enforcement officials.

3. The use, sale, or possession of an illegal drug or controlled substance while on duty is cause for termination.

4. Any employee who commits an unlawful act on or off company premises or whose conduct discredits the employer in any way will be subject to discipline, including termination.

5. No alcoholic beverage will be brought or consumed on company premises except in connection with company authorized events.

6. No prescription drug will be brought on company premises by any person other than the one for whom it is prescribed. Such drugs will be used only in the manner, combination and quantity prescribed.

7. Any employee whose off-duty abuse of alcohol or illegal or prescription drugs results in excessive absenteeism or tardiness or is the cause of accidents or poor work will be referred to an employee assistance program for rehabilitation and will face termination if he/she rejects that program.

8. For purposes of this rule, an alcoholic beverage is any beverage that may be legally sold and consumed and has an alcoholic content in excess of 3 % by volume.

9. Drug means any substance other than alcohol, capable of altering an individual's mood, perception, pain level or judgement. Drug also means a prescription for individual consumption by a licensed medical practitioner. An illegal drug is any drug or controlled substance the sale or consumption of which is illegal.

The purposes of the policy set forth above are:

a. to establish and maintain a safe, healthy working environment for all employees

b. to ensure the reputation of the company and it's employees within the community and industry at large;

c. To reduce the number of accidental injuries to person or property;

d. To reduce absenteeism and tardiness and improve productivity; and

e. To provide rehabilitation assistance for any employee who needs such help.

The company regrets any inconvenience or problems that the policy may cause but believes that the overall benefit to the company and the employees makes it both necessary and helpful.

NOTICE OF CIRCUMSTANCES WHICH WILL RESULT IN TESTING

Each employee will be tested for drugs and alcohol upon hire, if he/she has been observed using a prohibited substance on the job, if he/she exhibits a severe and prolonged reduction in productivity, or if the company has other reasonable cause for testing him/her. Post-accident drug screening will be conducted when reasonable suspicion exists.

An employee who fails to submit to required testing will be subject to discipline including termination.

NOTICE OF CIRCUMSTANCES WHICH MAY RESULT IN SEARCH

Every employee will be required, upon the company's request, to submit to a search of any vehicle brought on company premises, to submit to a search of any pocket, package, purse, briefcase, tool box, lunch box, or other container brought onto company premises and to submit to a search of a desk, file, locker, or other stationary container provided by the company.

SOP 200 - Temporary Heating Checklist:

This checklist shall be completed prior to using temporary heat on each project. Distribute to Safety Manager and Operations Manager.

Date:	
Job Name:	
Job Number:	
Superintendent	

Unit Type:	Yes	No	N/A	Notes:
Permanent System				
Open Flame type				
Electric type				
Steam or Hot Water type				
Existing Permanent System				
Open flame type				
Electric type				
Steam or Hot Water type				
Portable Heating Device				
Direct Fired Unit				
Indirect Fired Unit				
Electric Coil Unit				
Other				
Energy Type:	Yes	No	N/A	Notes:
LP Gas				
Natural Gas				
Electric				
Other				

Fire Watch				
Proposal includes a fire watch.				

Manuals / Technical Data provided:				
Heater Units				
Hoses / Fittings / Supply Lines				

Duration and Hours of Operation:	Yes	No	N/A	Notes:
Duration of Operation				
Hours of Operation				

Permanent Unit Safety Features:	Yes	No	N/A	Notes:
Temporary temperature controls.				
Active sprinkler system.				
Automatic Shutdown Feature				
Fire Alarm system.				
Thermostat controlled.				
CO detection system.				
Remote monitoring system.				
Remote alarm notification.				
Duct detectors.				
Static pressure sensors.				
Permanent filter or equivalent.				

Portable Unit Safety Features				
High Limit Switch - (no sparks or embers will exit the unit.)				
Flame Rod – Flame Failure Switch - (Unit verifies that pilot is lit prior to starting.)				
Air Proving Switch – (Unit verifies blower is working prior to starting.)				
Unit(s) is thermostat controlled.				
Unit(s) is fully enclosed.				
Unit(s) will auto-shutdown if air flow intake is restricted.				
Wireless Notification System				
Wireless Concord Control Panel				
Wireless High/Low Heat Sensor				
Wireless Smoke Detection				
Wireless Audible Alarm				
Wireless CO Detection				

Unit Duct:	Yes	No	N/A	Notes:
Heat will be transferred to the building using flex duct, fire resistant plywood, metal duct work.				

Unit Location:				
A site plan has been provided for review identifying locations of heat unit(s) and storage tank(s).				
Location of Unit(s) has been identified and is a minimum of 25' from the building or enclosure.				
Debris Netting will be installed around temp heat unit(s).				

LP Storage Tanks	Yes	No	N/A	Notes:
Location of tank(s) have been identified and approved. (Outside building)				
Soap Tests will be performed on a regular basis.				
Fire Extinguishers and proper Signage will be readily available for each unit location.				
Soap Tests will be performed on a regular basis.				
Flexible gas hose specifications have been provided and approved.				
Manifold and check valves will be used.				
Check valves will be located at the tank and at any hose connection.				
Connections to the manifold will be performed by the supplier.				
Overhead protection of tanks.				

Site Plan:	Yes	No	N/A	Notes:
Unit will be placed a minimum 25' from building or enclosure being heated.				
Combustibles can be kept a minimum of 15' from building.				

Training:	Yes	No	N/A	Notes:
Training on the unit will be provided by the manufacturer or supplier.				
Training on the wireless system will be provided.				

Other:	Yes	No	N/A	Notes:
Fire Marshall will be notified as to the presence and location of tanks and heaters.				
CO monitoring will be performed before the start of each day.				
The supplier will inspect each unit periodically.				
Emergency contact list has been established.				

Notes

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 146 Implementation **Next Scheduled Review: 5/2024**
Date: 9/2020 **Revision Date:**

Title
Walking and Working Surfaces Program

Purpose
Slips, trips, and falls constitute the majority of general industry accidents. They cause 15% of all accidental deaths, and are second only to motor vehicles as a cause of fatalities. Active participation by management, supervisors and employees is necessary to prevent hazardous conditions that could result in slips, trips or falls.

Scope
This document applies to all employees.

Responsibilities
Management is responsible for:

Conduct routine inspections to ensure all walking and working surfaces are free from slip, trip and fall hazards

Identifying Conduct training for employees who use ladders, scaffolds or other elevated platforms

Conduct training in use and inspection of fall prevention & arrest equipment

Ensure proper ladders are used for specific tasks

Provide adequate fall prevention & arrest equipment

Employees are responsible for:

Maintain work areas free from slip, trip & fall hazards

Correct or immediately report slip, trip and fall hazards

Use proper ladders for assigned tasks

Special Definitions

Procedure
1.0 HAZARD CONTROL

1.1 Engineering Controls

1.1.1 Proper construction of elevated locations

1.1.2 Use of hand, knee and toe rails where required

1.1.3 Proper design of fixed ladders & stairs
1.1.4 Adequate lighting in all areas

1.2 Administrative Controls
1.2.1 Training for all employees who work at elevated location
1.2.2 Routine inspections of ladders, stairs, walking and working surfaces
1.2.3 Following Housekeeping Program requirements
1.2.4 Immediate cleanup of material spills

2.0 GENERAL REQUIREMENTS

2.1 Housekeeping
2.1.1 Simple Housekeeping methods can prevent slip-trip-fall hazards:
2.1.2 All work areas, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.
2.1.3 The floor of every area shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and gratings, mats, or raised platforms shall be provided.
2.1.4 Every floor, work area and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.

2.2 Aisles and Passageways
2.2.1 Aisles and passageways shall be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.
2.2.2 Permanent aisles and passageways shall be appropriately marked.
2.2.3 Where mechanical handling equipment is used, aisles shall be sufficiently wide. Improper aisle widths coupled with poor housekeeping and vehicle traffic can cause injury to employees, damage the equipment and material, and can limit egress in emergencies.

2.3 Floor Loading Protection
2.3.1 Load rating limits shall be marked on plates and conspicuously posted. It shall be unlawful to place, or cause, or permit to be placed, on any floor or roof of a building or other structure, a load greater than that for which such floor or roof is approved.

2.4 Guarding Floor & Wall Openings
2.4.1 Floor openings and holes, wall openings and holes, and the open sides of platforms may create hazards. People may fall through the openings or over the sides to the level below. Objects, such as tools or parts, may fall through the holes and strike people or damage machinery on lower levels.

2.5 Protection for Floor Openings
2.5.1 Standard railings shall be provided on all exposed sides of a stairway opening, except at the stairway entrance. For infrequently used stairways, where traffic across the opening prevents the use of a fixed standard railing, the guard shall consist of a hinged floor opening cover of standard strength and construction along with removable standard railings on all exposed sides, except at the stairway entrance.

2.5.1.1 A "standard railing" consists of top rail, mid rail, and posts, and shall have a vertical height of 42 inches nominal from the upper surface of top rail to floor, platform, runway, or ramp level. Nominal height of mid rail is 21 inches.

2.5.1.2 A "standard toeboard" is 4 inches nominal in vertical height, with not more than ¼-inch clearance above floor level.

2.6 Floor openings may be covered rather than guarded with rails. When the floor opening cover is removed, a temporary guardrail shall be in place, or an attendant shall be stationed at the opening to warn personnel.

2.7 Every floor hole into which persons can accidentally walk shall be guarded by either:

2.7.1 A standard railing with toeboard, or

2.7.2 A floor hole cover of standard strength and construction.

2.8 While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.

2.9 Protection of Open-Sided Floors, Platforms, and Runways

2.9.1 Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard wherever, beneath the open sides:

2.9.1.1 Persons can pass,

2.9.1.2 There is moving machinery, or

2.9.1.3 There is equipment with which falling materials could create a hazard.

2.9.2 Every runway shall be guarded by a standard railing, or the equivalent, on all sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side.

2.10 Stairway Railings and Guards

2.10.1 Every flight of stairs with four or more risers shall have standard stair railings or standard handrails as specified below. Stair width is measured clear of all obstructions except handrails.

2.10.1.1 On stairways less than 44 inches wide having both sides enclosed, at least one handrail shall be affixed, preferably on the right side descending.

2.10.1.2 On stairways less than 44 inches wide with one open side, at least one stair rail shall be affixed on the open side.

2.10.1.3 On stairways less than 44 inches wide having both sides open, two stair rails shall be provided, one for each side.

2.10.1.4 On stairways more than 44 inches wide, but less than 88 inches, one handrail shall be provided on each enclosed side and one stair rail on each open side.

2.10.1.5 On stairways 88 inches or more in width, one handrail shall be provided on each enclosed side, one stair rail on each open

side, and one intermediate stair rail placed approximately in the middle of the stairs.

2.10.2 A "standard stair railing" (stair rail) shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from the upper surface of the top rail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

2.11 Fixed Industrial Stairs

2.11.1 Fixed Industrial Stairs shall be provided for access to and from places of work where operations necessitate regular travel between levels. Requirements include:

2.11.1.1 Fixed industrial stairs shall be strong enough to carry five times the normal anticipated live load.

2.11.1.2 At the very minimum, any fixed stairway shall be able to carry safely a moving concentrated load of 1000 pounds.

2.11.1.3 All fixed stairways shall have a minimum width of 22 inches.

2.11.1.4 Fixed stairs shall be installed at angles to the horizontal of between 30^{o} and 50^{o}.

2.11.1.5 Vertical clearance above any stair tread to an overhead obstruction shall be at least 7 feet measured from the leading edge of the tread.

2.12 Portable Ladders

2.12.1 The chief hazard when using a ladder is falling. A poorly designed, maintained, or improperly used ladder may collapse under the load placed upon it and cause the employee to fall.

2.12.2 A ladder is an appliance consisting of two side rails joined at regular intervals by crosspieces on which a person may step to ascend or descend.

2.12.3 The various types of portable ladders include:

2.12.3.1 Stepladder - A self-supporting portable ladder, non-adjustable in length, having flat steps and hinged back.

2.12.3.2 Single Ladder - A non self-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designed by overall length of the side rail.

2.12.3.3 Extension Ladder - A non self-supporting portable ladder adjustable in length.

2.12.4 Portable Ladder Requirements:

2.12.4.1 Portable stepladders longer than 20 feet shall not be used.

2.12.4.2 Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position.

2.12.4.3 Single ladders longer than 30 feet shall not be used.

2.12.4.4 Extension ladders longer than 60 feet shall not be used.

2.12.4.5 Ladders shall be maintained in good condition at all times.

2.12.4.6 Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair

or destruction and tagged or marked as "Dangerous, Do Not Use."

2.12.5 Proper use of ladders is essential in preventing accidents. Even a good ladder can be a serious safety hazard when used by workers in a dangerous way.

2.12.6 Portable Ladder Safety Precautions:

2.12.6.1 Ladders shall be placed with a secure footing, or they shall be lashed, or held in position.

2.12.6.2 Ladders used to gain access to a roof or other area shall extend at least 3 feet above the point of support.

2.12.6.3 The foot of a ladder shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the support). See figure above.

2.12.6.4 The worker shall always face the ladder when climbing up or down.

2.12.6.5 Short ladders shall not be spliced together to make long ladders.

2.12.6.6 Ladders shall never be used in the horizontal position as scaffolds or work platforms.

2.12.6.7 The top of a regular stepladder shall not be used as a step.

2.12.6.8 Use both hands when climbing or descending ladders.

2.12.6.9 Metal ladders shall never be used near electrical equipment.

2.13 Fixed Ladders

2.13.1 A fixed ladder is a ladder permanently attached to a structure, building or equipment. A point to remember is that fixed ladders, with a length of more than 20 feet to a maximum unbroken length of 30 feet shall be equipped with cages or a ladder safety device. A "cage" is a guard that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

2.13.1.1 Cages shall extend a minimum of 42 inches above the top of a landing, unless other acceptable protection is provided.

2.13.1.2 Cages shall extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder.

2.14 Scaffolding Safety

2.14.1 The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable objects, such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

2.14.2 Scaffolds and their components shall be capable of supporting at least four times the maximum intended load.

2.14.3 Scaffolds shall be maintained in a safe condition and shall not be altered or moved horizontally while they are in use or occupied.

2.14.4 Damaged or weakened scaffolds shall be immediately repaired and shall not be used until repairs have been completed.

2.14.5 A safe means must be provided to gain access to the working platform level through the use of a ladder, ramp, etc.

2.14.6 Overhead protection must be provided for personnel on a scaffold exposed to overhead hazards.

2.14.7 Guardrails, midrails, and toeboards must be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Wire mesh must be installed between the toeboard and the guardrail along the entire opening, where persons are required to work or pass under the scaffolds.

2.14.8 Employees shall not work on scaffolds during storms or high winds or when covered with ice or snow.

2.14.9 As noted earlier, there are a number of scaffold types, and 1910.28 should be reviewed carefully for special requirements that apply to each type.

3.0 MANUALLY PROPELLED MOBILE LADDER STANDS AND SCAFFOLDS (TOWERS)

3.1 All exposed surfaces of mobile ladder stands and scaffolds shall be free from sharp edges, burrs, or other safety hazards.

3.2 The maximum work height shall not exceed four times the minimum base dimension unless outriggers, guys or braces are added to provide stability.

3.3 This standard requires guardrails and toeboards for work levels 10 feet or more above the ground or floor.

4.0 OTHER WORKING SURFACES

4.1 Portable dockboards (bridge plates) shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping. Movement of the dockboard during material handling operations has resulted in forklifts overturning, or falling off the dock, often with serious injury or death to the driver and damage to equipment and material.

4.1.1 Handholds shall be provided on portable dockboards to permit safe handling when the dockboard must be repositioned or relocated.

4.1.2 Portable dockboards shall be inspected prior to use

4.1.3 When not in use, portable dockboards will be stored in a manner to prevent damage

NEWKIRK NOVAK CONSTRUCTION PARTNERS

Standard Operating Procedure

Document Number: 113 **Next Scheduled Review: 5/2024**
Implementation Date: 9/2020 **Revision Date:**

Title
Welding and Cutting

Purpose
This program is for the protection of persons from injury and illness and the protection of property (including equipment) from damage by welding, cutting, and allied processes.

Scope
This standard is for the guidance of Supervisors and welders in the safe set up and use of welding and cutting equipment and the safe performance of welding and cutting operations.

Responsibilities
Operators and management shall recognize their joint responsibilities for safety in welding and cutting.

Special Definitions

Procedure
1.0 GENERAL PROVISIONS, MANAGEMENT, AND SUPERVISION

1.1 Equipment and condition Maintenance

1.1.1 All welding and cutting equipment shall be kept in good working condition, inspected as necessary to be sure it is in good working condition, and when found to be defective (incapable of reliable, safe operation) shall be promptly repaired by qualified personnel or withdrawn from service.

1.2 Operations

1.2.1 All equipment shall be operated in accordance with manufacturers recommendations and instruction provided these are consistent with this standard.

1.3 Management

1.3.1 Training Management shall assure that welders and their Supervisors are trained in the safe operation of their equipment, the safe use of the process, and emergency procedures.

1.4 Designated areas and procedures

1.4.1 Management shall designate approved areas, and establish procedures for safe welding and cutting. Management shall designate an individual responsible for authorizing welding and cutting operations in areas not specifically designed or approved for such processes. The individual shall be aware of the hazards involved and familiar with the provisions of this program.

1.5 Approved equipment

1.5.1 Management shall assure that only approved apparatus, such as torches, manifolds, regulators, pressure reducing valves, acetylene generators, welding machines, electrode holders, and personal protective devices are used.

1.6 Contractors

1.6.1 Management shall select contractors to perform welding who are suitably trained, and who have an awareness of the risks involved.

1.6.2 Management shall advise contractors about flammable materials or hazardous conditions of which they may not be aware. The contractor shall sign the "Contractors Briefing From".

1.7 Safe use of equipment

1.7.1 Supervisors shall be responsible for the safe handling of the welding equipment and for the safe use of welding process.

1.8 Combustibles

1.8.1 Supervisors shall determine what combustible materials and hazardous areas are present or likely to be present at the work location. They shall ensure that combustibles are not exposed to ignition by taking one or more the following actions

1.8.2 Have the work moved to a location free from combustibles.

1.8.3 Have the combustibles moved to a safe distance from the work or properly shielded against ignition if the work cannot readily be moved.

1.8.4 Schedule welding and cutting so that combustibles are not exposed during those operations.

1.9 Authorization

1.9.1 Supervisors shall secure authorization for the welding or cutting operations from the designated management representative. Supervisors shall oversee that the welder has approval that conditions are safe before going ahead.

1.10 Protection of personnel and the general area

1.10.1 Equipment: Welding equipment, machines, cable, and other apparatus shall be placed so that it does not present a hazard to personnel in passageways, on ladders, or stairways. Good housekeeping shall be maintained.

1.10.2 Warning Signs: Warning signs shall be posted designating welding areas, and indicating that eye protection should be worn.

1.10.3 Protective Screens: Workers or others persons adjacent to the welding areas shall be protected from the radiant energy and spatter of welding and cutting arcs by non-combustible or flame-resistant screens or shields, or shall be required to wear suitable eye/face protection and protective clothing. Suitable radiation-protective, semi-transparent materials are permissible. Booths and screens should permit circulation of air at floor levels as well as above the screen.

1.10.4 Wall Reflectivity: Where arc welding is regularly carried on adjacent to painted walls, the wall should be painted with a finish having low reflectivity to ultraviolet radiation. Finishes formulated with pigments such as titanium dioxide or zinc oxide has low reflectivity to ultraviolet radiation. Color pigments may be added if they do not increase reflectivity.

1.10.5 Lamp black has been recommended as a paint additive in the past, but it reduces visible light and is accordingly less desirable in view of the need for good lighting

as well as ultraviolet radiation absorption. Pigments based on powdered or flaked metals are not recommended because of their high reflectivity to ultraviolet radiation.

1.11 Ventilation

1.11.1 Adequate ventilation (natural, mechanical, and respirator) must be provided for all welding, cutting, brazing, and related operations. Adequate ventilation means enough ventilation such that personnel exposures to hazardous concentrations of airborne contaminants are maintained below the allowable levels specified by the U.S. Occupational Safety and Health Administration (OSHA), the American Conference of Governmental Hygienists (ACGIH), or other applicable authorities, In cases where the values for allowable exposure limits vary among recognized authorities, the lower values should be used to effect the maximum personnel protection . Adequate ventilation depends upon the following factors:

1.11.2 Volume and configuration of the space in which operations occur.

1.11.3 Number and type of operations generating contaminants.

1.11.4 Allowable levels of specific toxic or flammable contaminants being generated.

1.11.5 Natural air flow (rate and direction) and general atmospheric conditions where work is being done.

1.11.6 Location of the welder's and other person's breathing zones in relation to the contaminants or sources.

1.11.7 Fumes and gases from welding and cutting cannot be classified simply. The composition and quantity of fumes and gases are dependent upon the metal being worked, the process and consumables being uses, coatings on the work such as paint, galvanizing, or plating, contaminants in the atmosphere such as halogenated hydrocarbon vapors from cleaning and degreasing activities, as well as the factors itemized in this selection for adequate ventilation.

1.11.8 In welding and cutting, the composition of the fumes is usually different from the composition of the electrode or consumables. Reasonably expected fume products of normal operation include those originated from volatilization, reaction, or oxidation of consumables, base metals and coating, and the atmospheric contaminants noted. Reasonably expected gaseous products include carbon monoxide, carbon dioxide fluorides, nitrogen oxides, and ozone.

1.12 Designated welding and cutting areas

1.12.1 Welding and cutting should preferably be done in specially designated areas, which have been designated and constructed to minimize fire risk.

1.12.1.1 Areas Containing Combustibles

1.12.1.1.1 Conditions for Cutting or Welding: No welding or cutting shall be done unless the atmosphere is nonflammable and unless combustibles are moved away or protected from fire hazards.

1.12.1.1.2 Work Movable. Where practicable, move the work to a designated safe location.

1.12.1.1.3 Fire Hazards Movable: Where the work cannot be moved, take all movable nearby fire hazards to a safe place.

1.12.1.1.4 Work and Fire Hazards Immovable: Where the work and fire hazards are not movable, use guards to protect the immovable fire hazards and nearby personnel from the heat, sparks, and slag.

1.12.1.1.5 Combustible Floors (except wood on concrete): Sweep, clean, and protect combustible floors by wetting with water or covering with damp sand, sheet metal, or the equivalent. Make provisions to protect personnel from the electric shock when floors are wet. For the purpose of this provision, wood floors laid directly on concrete need not be wetted or covered.

1.12.1.1.6 Nearby Openings: Cover or close all cracks or openings in the floor or otherwise take precautions to protect readily combustible materials on the floor below from sparks, which might drop through the openings. Observe the same precautions with regard to cracks or openings in walls, open doorways, or open or broken windows.

1.13 Fire protection

1.13.1 Extinguishers and Sprinklers: Sufficient fire extinguishing equipment shall be ready for use where welding and cutting work is being done. The fire extinguishing equipment may be pails of water, buckets of sand, hose, or portable extinguishers, depending upon the nature and quantity of the combustible material exposed. Where sprinkler system protection exists, it shall remain operable during the welding or cutting. Automatic sprinkler heads in the immediate vicinity of the welding may be temporarily shielded with noncombustible sheet material or damp cloth guards of necessary.

1.13.1.1 Fire Watchers Required: Always use fire watchers where welding or cutting is done and a large fire might develop, or whenever any of the following conditions exist:

1.13.1.1.1 *Proximity of Combustibles:* Combustible materials in building construction or contents are closer than 35 ft (10.7m) to the point of operation.

1.13.1.1.2 *Opening:* There are wall or floor openings within a 35 ft (17.7 m) radius, which expose combustible material in adjacent areas, including concealed spaces in walls or floors.

1.13.1.1.3 *Metal Walls:* Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

1.13.1.2 Fire Watch Duties: Fire watchers shall be trained in the use of fire extinguishing equipment. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. a fire watch shall be maintained for at least one-half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

1.13.1.3 Hot Work Authorization: Before welding or cutting is begun in a location not designed for such purposes, inspections and authorization by a designated person shall be required.

1.13.1.4 Welding or Cutting Containers That Have Held Flammables: Welding or cutting containers that have, or had, flammable materials are not permitted.

2.0 SPECIFIC PROCESSES

2.1 Oxyfuel Gas Welding and Cutting

2.1.1 Scope

2.1.1.1 This section covers safe practices for users of oxyfuel gas welding, cutting, soldering, brazing, and related equipment. It does not cover specifications for the design and construction of such equipment, nor for the construction or installation of bulk gas supply or piping distribution systems.

2.1.2 Terminology

2.1.2.1 Call Oxygen by Name. Oxygen shall be called by its proper name, *Oxygen,* and not by the word, *Air*.

2.1.2.2 Call Fuel Gases by Name. Fuel gases shall be called by their proper names, such as, acetylene, propane, natural gas, and not by the word, *gas.*

2.1.3 Oxygen and Combustibles

2.1.3.1 Keep Oxygen from Combustibles. Oxygen will not burn, but vigorously supports and accelerates combustion causing flammable materials to burn with great intensity.

2.1.3.2 Oil or grease in the presence of oxygen may ignite spontaneously and burn violently.

2.1.3.3 Oxygen cylinders, cylinder valves, couplings, regulators, hoses and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves.

2.1.3.4 Prohibited Uses for Oxygen. Oxygen shall not be used as a substitute for compressed air. Oxygen shall not be used in pneumatic tools, in oil preheating burners, to start internal combustion engines, to blow out pipelines, to dust clothing or work, or to create pressure for ventilation or similar applications. Jets of oxygen shall not be permitted to strike oily surfaces, greasy clothing, or enter fuel oil or other storage tanks.

2.1.3.5 Oxygen Equipment: Oxygen cylinders, equipment, pipelines, or apparatus shall not be used interchangeably with any other gas.

2.1.3.6 Attachments for Gas Mixing. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption except at a burner or in a torch, shall be allowed unless approved for the purpose.

2.1.4 Torches

2.1.4.1 Approval: Only approved torches shall be used.

2.1.4.2 Leak Testing Connections: Connections shall be checked for gas tightness after assembly and before lighting torch. Use soapy water or the equipment, not a flame.

2.1.4.3 Purging Hoses: Before lighting torch for the first time each day, hoses shall be purged individually. This consists of allowing each gas to flow through its respective hose separately, long enough to purge out any flammable gas mixture in the hose. Hoses shall not be purged into confined spaces or near ignition sources.

2.1.4.4 Lighting Torch: Use a friction lighter, stationary pilot flame, or other suitable source of ignition. Do not use matches or cigarette lighters for lighting torches; do not attempt to light or relight torch from hot metal in a

small cavity, hole, furnace, etc. where gas might accumulate. Point the torch away from persons or combustible materials.

2.1.4.5 Manufacturers' procedures shall be followed with respect to the sequence of operations in lighting, adjusting, and extinguishing torch flames.

2.1.5 Hose and Hose Connections

2.1.5.1 Specification: Hose for oxyfuel gas service shall comply with specifications for Rubber Welding Hose, from the Compressed Gas Association and Rubber Manufacturers Association.

2.1.5.2 Metal-clad or armored hose is not recommended. However, as part of a machine or an appliance when conditions of use make metal reinforcing advantageous, hose may be used in which such metal reinforcing is exposed to neither the inside gases nor the outdoor atmosphere.

2.1.5.3 Colors: The generally recognized colors in the United States are red for fuel gas hose, green for oxygen hose, and black for inert-gas and air hose.

2.1.5.4 When parallel lengths of oxygen and fuel gas hose are taped together for convenience and to prevent tangling, not more than 4 in. (100mm) in each 12 in. (300 mm) shall be covered by tape.

2.1.5.5 Maintenance: Hose showing leaks, burns, worn places, or other defects rendering it unfit for service shall be repaired or replaced.

2.1.5.6 Hose Connection Specifications: Hose connections shall comply with the standard hose connection specification.

2.1.5.7 Hose connections for welding gas lines should not be compatible with connections for breathing air.

2.1.5.8 Hose Connection Quality: Hose connections shall be fabricated in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service but in no cases less than 300 psi (2070 k Pa). Oil-free air or an oil-free inert gas shall be used for testing.

2.1.5.9 Devices: When an approved device such as a hose check valve or flash-back arrestor is used in an oxyfuel gas welding and cutting torch system, the device shall be used and maintain in accordance with the manufacturer's instructions (see compressed Gas Association, Inc. pamphlet E-2).

2.1.6 Pressure-Reducing Regulators

2.1.6.1 Only approved pressure reducing regulators shall be used.

2.1.6.2 Pressure reducing regulators shall be used only for the gas and pressures for which they are labeled. The regulator inlet connections shall comply with Compressed Gas Cylinder-Valve Outlet and Inlet Connections, Compressed Gas Association Standard V-1.

2.1.6.3 Regulators shall not be interchanged among designated gas services.

2.1.7 Inspection before use

2.1.7.1 Unit nuts and connections on regulators shall be inspected before use to detect faulty seats, which may cause leakage when the regulators are attached to cylinder valves or hoses. Damaged nuts or connections shall be replaced.

2.1.8 Oxygen Gauges

2.1.8.1 Gauges used for oxygen service shall be marked "USE NO OIL."

2.1.9 Oxygen Regulators

2.1.9.1 Regulators shall be drained of oxygen before they are attached to a cylinder or manifold, or before the cylinder valve is opened. The regulator attached to a cylinder can be drained of oxygen by momentarily opening and then closing the downstream line to the atmosphere with the regulator adjusting screw engaged and the cylinder valve closed. The cylinder valve is then opened slowly. The oxygen cylinder or manifold outlet connection should be wiped clean with a clean cloth, free of oil and lint, and the cylinder valve "cracked" before connecting the regulator. Oxygen cylinder or manifold valves shall always be opened slowly.

2.1.10 Maintenance

2.1.10.1 When regulators or parts of regulators, including gauges, need repair, the work shall be performed by skilled mechanics who have been properly instructed.

2.2 Cylinders (Containers)

2.2.1 General Cylinder Provisions

2.2.1.1 All portable cylinders used for storage and shipment of compressed gases shall be constructed and maintained in accordance with regulations of the U.S. Department of Transportation (DOT).

2.2.1.2 Such compliance will be recognized by markings on the cylinder, usually on the top shoulder, with the applicable DOT specification number (ICC number on older cylinders). and by retest dates where applicable.

2.2.1.3 Filling Authorization: No one except the owner of the cylinder or person authorized by the owner shall fill a cylinder.

2.2.1.4 Mixing Gases: No person other than the gas supplier shall mix gases in a cylinder or transfer gases from one cylinder to another.

2.2.1.5 Content Identification: Compressed gas cylinders shall be legibly marked with either the chemical or the trade name of the gas in conformance with the Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Standard Z48.1, for the purpose of identifying the gas content. Such markings shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Do not use cylinders on which the labeling is missing or illegible. Return such cylinders to the supplier.

2.2.1.6 Changing Markings: The numbers and markings stamped into cylinders shall not be changed except in conformance with DOT regulations.

2.2.1.7 Connection Threads: Compressed gas cylinders shall be equipped with connections complying with the Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI/CIA V-1.

2.2.1.8 Valve Protection: All cylinders with a water weight capacity over 30 lb (13.6 kg) shall be equipped with a means of connecting a valve protection cap or with a collar or recess to protect the valve.

2.2.1.9 Cylinder Temperature: The temperature of the cylinder contents shall not be allowed to exceed 130 degrees Fahrenheit (54 degrees Celsius).

2.2.1.10 Cylinder Storage

2.2.1.10.1 Protection: Cylinders shall be stored where they will not be exposed to physical damage, tampering by unauthorized persons, or subject to temperatures, which would raise the contents above the safe limits.

2.2.1.10.2 Cylinders shall be stored away from elevators, stairs, or gangways in assigned places where cylinders will not be knocked over or damaged by passing or falling objects. Cylinders shall be secured in storage to prevent falling.

2.2.1.10.3 Cylinders Separated From Combustibles: Cylinders in storage shall be separated from flammable and combustible liquids and from easily ignited materials such as wood, paper, packaging materials, oil, and grease by at least 20 ft (6.1 m), or by a non-combustible barrier at least 5 ft (1.6 m) high having a fire resistance of at least one-half hour.

2.2.1.10.4 Oxygen Separated From Fuel Gas: Oxygen cylinders in storage shall additionally be separated from fuel gas cylinders, or from reserve stocks of calcium carbide, by a similar distance or barrier as described in.

2.2.1.10.5 Oxygen in Acetylene Generator Buildings: Oxygen cylinders stored in outside acetylene generator houses shall be separated from the generator or carbide storage rooms by a noncombustible partition having fire resistance of at least one hour. This partition shall be without openings and shall be gas tight.

2.2.1.10.6 Fuel Gas Cylinders Upright: Acetylene and liquefied gas cylinders shall be used valve end up.

2.2.1.10.7 Fuel Gas Storage Limits: Fuel gas storage limits shall be in accordance with ANSI/NFPA 51, *Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting and Allied Process.*

2.2.1.10.8 Non-sprinklered Indoor Areas: In non-sprinklered indoor areas, the maximum non-liquefied fuel gas storage shall be 2500 cu ft (70m cubed). The maximum liquefied fuel gas storage shall be 735 lbs (333 kg) water capacity; 735 lb water capacity is equivalent to 309 lbs (140 kg) propane, 368 lbs (167 kg) methyacetylene-propadiene, stabilized, or 375 lbs (170 kg) butane. More than one such storage area is permitted in a building if separated by a minimum distance of 100 ft (30 m).

2.2.1.11 Cylinder Handling

2.2.1.11.1 Rough Handling: Cylinders shall not be dropped, struck, or permitted to strike objects violently in manner, which may damage the cylinder, valve, or safety device.

2.2.1.11.2 Pry Bars: Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed. The use of warm (not boiling) water is recommended.

2.2.1.11.3 Rollers or Supports. Cylinders shall never be used as rollers or supports, whether full or empty.

2.2.1.11.4 Safety Devices: Safety devices shall not be tampered with.

2.2.1.11.5 Closed Valves: Cylinder valves shall be closed before moving cylinders.

2.2.1.11.6 Valve Protection Caps: Valve protection caps, where the cylinder is designed to accept a cap, shall always be in place and hand tight (except when cylinders are in use or connected for use)

2.2.1.11.7 Manual Lifting. Valve protection caps shall not be used for lifting cylinders.

2.2.1.11.8 Lifting Equipment: When transporting cylinders by a crane or derrick, a cradle or suitable platform shall not be used for this purpose.

2.2.1.11.9 Transporting Cylinders: When cylinders are transported by motor vehicle, they shall be secured in position.

2.2.1.11.10 Cylinders with Regulators Attached: When cylinders are to be moved with regulators attached, the cylinders shall be secured in position when moved, and cylinder valve closed.

2.2.1.12 Cylinder Use

2.2.1.12.1 Pressure Regulator: Compressed gas shall never be used from cylinders without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold, unless the equipment used is designed to withstand full cylinder pressure.

2.2.1.12.2 Maximum Acetylene Pressure: Acetylene shall not be utilized at a pressure in excess of 15 psig (103 kPa gauge pressure) or 30 psia (206 kPa absolute).

2.2.1.12.3 The 30 psia (206 kPa abs.) (absolute pressure) limit is intended to prevent unsafe use of acetylene in pressurized chambers such as caissons, underground excavations, or tunnel construction.

2.2.1.12.4 This requirement shall not apply to storage of acetylene dissolved in a suitable solvent in cylinders manufactured and maintained according to Department of Transportation requirements, or to acetylene for chemical use.

2.2.1.12.5 "Cracking" Cylinder valve: Before connecting a regulator to a cylinder valve, the valve outlet shall be wiped clean with a clean cloth free of oil and lint, and the valve shall be opened momentarily and closed immediately.

2.2.1.12.6 This action, generally termed *cracking* is intended to clear the valve of dust or dirt that otherwise might enter the regulator.

2.2.1.12.7 The valve shall be "cracked" while standing to one side of the outlet never in front of it. Never "crack" a fuel gas cylinder valve near other welding work or near sparks, flame, or other possible sources of ignition.

2.2.1.12.8 The following shall be done after the regulator is attached to oxygen cylinders:

2.2.1.12.8.1 (1) Engage the adjusting screw and open the downstream line to drain the regulator gas, and

2.2.1.12.8.2 (2) Disengage the adjusting screw and open the cylinder valve slightly so that the regulator cylinder-pressure gauge pointer

moves up slowly before opening the valve all the way. Stand to one side of the regulator and not in front of the gauge faces when opening the cylinder valve. If oxygen high pressure is suddenly applied, it is possible to cause ignition in the regulator and injure the operator.

2.2.1.12.9 A hammer or wrench shall not be used to open cylinder valves that are fitted with hand wheels.

2.2.1.12.10 Cylinders not having fixed hand wheels shall have keys, handles, or nonadjustable wrenches on valve stems while these cylinders are in service so that the gas flow can be turned off quickly in event of emergency. In multiple cylinder installations, at least one such wrench shall always be available for immediate use.

2.2.1.12.11 When a high-pressure (non-liquefied) gas cylinder is in use, the valve shall be opened fully in order to prevent leakage around the valve stem.

2.2.1.12.12 An acetylene cylinder valve shall not be opened more than approximately one and one-half turns and preferably no more than three-fourths of a turn. This is so that it may be closed quickly in case of emergency.

2.2.1.12.13 Nothing shall be placed on top of a cylinder when in use which may damage the safety device or interference with the quick closing of the valve.

2.2.1.12.14 Cylinder valves shall be closed when work is finished.

2.2.1.12.15 Before a regulator is removed from a cylinder, the cylinder valve shall be closed and the gas released from the regulator.

2.2.1.12.16 A suitable cylinder truck, chain, or steadying device shall be used to keep cylinders from being knocked over while in use.

2.2.1.12.17 Cylinders shall be kept far enough away from actual welding or cutting operations so that sparks, hot slag, or flame will not reach them, otherwise fire resistant shields shall be provided.

2.2.1.12.18 Cylinders shall not be placed where they might become part of an electrical circuit. Contacts with third rails, trolley wires, etc. shall be avoided. Cylinders shall be kept away from radiators, piping systems, layout tables, etc. that may be used for grounding electric circuits such as for arc welding machines. The tapping of electrodes against a cylinder shall be prohibited. Do not strike an arc on cylinders.

2.2.1.13 Cylinder Emergencies

2.2.1.13.1 If a leak is found around the valve stem of a fuel gas cylinder, the packing nuts should be tightened, or the cylinder valve closed.

2.2.1.13.2 If tightening the packing nut does not stop a valve stem leak, or if a fuel gas valve is leaking at the seal and cannot be stopped by closing the valve firmly, or if a leak should develop at a cylinder fuse plug or other safety device, then the fuel gas cylinder should be moved to a safe location outdoors, away from any source of ignition, marked properly, and the supplier advised.

2.2.1.13.3 Small fires a fuel gas cylinders, usually resulting from ignition of leaks should be extinguished, if possible, by closing the cylinder valve or by the use of water, wet cloths, or fire extinguisher. The leaks should then be treated as described in those sections.

2.2.1.13.4 In the case of a large fire at a fuel gas cylinder, such as from the functioning of a fuse plug or safety device, personnel should be evacuated from the area, and the cylinder kept wet down with a heavy water stream to keep it cool. It is usually better to allow the fire to continue to burn and consume the escaping gas; otherwise it may reunite with explosive violence.

2.2.1.13.5 If circumstances permit, it is often better to allow the cylinder fire to burn out in place rather than attempt to move the cylinder. If the cylinder is located where the fire should not be allowed to burn out in place, attempts may be made to move it to a safer location, preferably outdoors. Personnel should remain as distant as possible, and the cylinders should be kept cool with a water stream.

2.2.1.13.6 [A water capacity of 735 lb (334 kg) is equivalent to about 309 lb (140 kg) of propane, 368 lb (167 kg) of methylacetylene propadiene, stabilized, or 375 lb (170 kg) of butane.]

3.0 ARC WELDING AND CUTTING EQUIPMENT SAFETY

3.1 General

3.1.1 This section contains safety precautions specific to the installation and operation of arc welding and cutting equipment. The user is further referred to Part I of this standard, which is applicable to general safety in welding and cutting.

3.1.2 Arc welding and cutting equipment shall be chosen with safety in mind.

3.1.3 Persons in charge of the equipment or designated to operate the arc welding and cutting equipment shall have been properly instructed and qualified to maintain or operate such equipment and judged competent by their employers for their work responsibilities. Rules and instructions covering the operation and maintenance of the arc welding and cutting equipment shall be readily available.

3.2 Safety Aspects in Selection of Arc Welding Equipment

3.2.1 The safety aspects of welding shall be given consideration in the choice of arc welding equipment for the job to be done. Consideration for safety in design is obtainable by choosing apparatus complying with applicable NEMA standards, or ANSI/UL 551-1980, *Safety Standard for Transformer-Type Arc -Welding Machines.* Special purpose machines not covered by the above listed standards shall conform in all aspects to the standards set forth in this publication.

3.2.2 When welding or cutting is to be done with covered electrodes using alternating current (AC) or single-phase transformer rectifier arc welding machines and under electrically hazardous conditions due to water or perspiration; the welding operator shall take special care to prevent electrical shock by the use of dry gloves and clothing in good condition, use of electrical hazard footwear, and avoiding accidental contact with live electrical parts.

3.2.3 Other examples of electrically hazardous conditions are locations in which the freedom of movement is restricted, so that the operator is forced to perform the

work in a camped (kneeling, sitting, lying) position with physical contact with conductive parts, and locations that are fully or partially limited by conductive elements and in which there is a high risk of unavoidable or accidental contact by the operator.

3.2.4 Insulating conductive parts near the vicinity of the operator can minimize these hazards.

3.2.5 Other Conditions

3.2.5.1 Portable Control Devices: No connections for portable control devices such as push buttons to be carried by the operator shall be connected to an as circuit of higher than 120 volts. Exposed metal parts of portable control devices operating on circuits above 50 volts shall be grounded by a grounding conductor in the control cable.

3.2.5.2 Equipment Loading: Care should be taken in applying arc welding equipment to ensure that the current rating chosen is adequate to handle the job. Welding machines should not be operated above the current ratings and corresponding rated duty cycles as specified by the manufacturer and shall not be used for applications other than those specified by the manufacturer. Consideration should be given to the fact that actual welding currents may be higher than shown by indicators on the machines of welding is high over-currents are likely on general purpose welding machines when used with low arc voltage processes such as gas tungsten arc welding.

3.2.5.3 Welding Cables: Welding cables shall be of the flexible type designed especially for the rigors of welding service and of a size adequate for reasonably expected current and duty cycles. Special attention should be paid to the insulation of cables used with equipment, which includes high voltage, high frequency oscillators.

3.2.5.4 Conduit and Pipe Ground Limitations: Conduits containing electrical conductors shall not be used for completing a work lead circuit. Pipelines shall not be used as a permanent part of a welding circuit, but may be used during construction, extension, or repair providing the current is not carried through threaded joints, flanged bolted joints, or caulked joints. In addition, special precautions must be used to avoid sparking at the connection of the work lead cable.

3.2.5.5 Prohibited Work Lead Connection: Chain, wire ropes, cranes, hoists, and elevators shall not be used to carry welding current.

3.2.5.6 Electrical Continuity in Structures: When during construction or modification, a building or any other fabricated metal structure is used for a welding current return circuit, it shall be checked to ascertain whether proper electrical contact exists at all joints. Sparking or heating at any point shall be cause for rejection of the structure as a return circuit.

3.2.5.7 Connections to Minimize Shock Hazard: Where welders are working on one structure, sufficiently close to each other, and someone is likely to touch the exposed parts of more than one electrode holder simultaneously, machines shall be connected to minimize shock hazard as follows:

3.2.5.7.1 DC Machines: All DC machines shall be connected with the sample polarity. A test lamp or voltmeter may be used to determine whether the connections are correct.

3.2.5.7.2 AC Machines: All single phase AC machines shall be connected to the same phase of the supply circuit and with the same instantaneous polarity. A voltmeter can be used to determine whether the connections are correct.

3.2.6 Operation

3.2.6.1 Workers assigned to operate or maintain arc welding equipment shall be acquainted with those parts of this ANSI Z49.1 Standard applicable to their work assignments. For gas shielded arc welding, see also recommended practice documents such as AWS C5.6-79, *Recommended Practices for Gas-Metal Arc Welding.*

3.2.6.2 After assembling any connection to the machine, each assembled connection shall be checked once before starting operations to ascertain that it is properly made. In addition, the work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particle and spatter on contact surfaces. Coiled welding cable should be spread out before use to avoid overheating and damage to insulation. Jobs alternately requiring long and short cables should be equipped with insulated connectors so that idle lengths can be disconnected when not needed.

3.2.6.3 Grounding of the welding machine frame shall be checked. Special attention shall be given to safety grounding connections of portable machines. See NFPA 70, Article 250, *Grounding.*

3.2.6.4 There shall be no leaks of cooling water, shielding gas, or engine fuel that can adversely affect the welder's safety.

3.2.6.5 Manufacturers written rules and instructions covering the safe operation of equipment shall be made available to the welder and shall be strictly followed.

3.2.6.6 When the welder has occasion to leave his work or stop for any appreciable time, the electrode holder shall be de-energized by turning off the machine.

3.2.6.7 When the machine is to be moved, the input power supply to the equipment shall be electrically disconnected.

3.2.6.8 When not in use, metal and carbon electrodes shall be removed from holders to eliminate danger of electrical contact with persons or conducting objects. When not in use, electrode holders shall be so placed that they cannot make electrical contact with persons, conducting objects, flammable liquids, or compressed gas cylinders. When not in use, guns of semiautomatic welding machines shall be placed so that the gun switch cannot be operated accidentally.

3.2.6.9 Avoidance of electrical shock is largely within the control of the welder; therefore, it is especially important that the welder be thoroughly instructed in detail how to avoid shock. Safe procedures shall be observed at all times when working with equipment having voltages necessary for arc welding. These voltages can be dangerous to life. Even mild shocks can cause involuntary muscular contraction, leading to injurious falls from high places.

Severity of shock is determined largely by the path, duration, and amount of current flowing through the body, which is dependent upon voltage and contact resistance of the area of skin involved. Clothing damp from perspiration or wet working conditions may reduce contact resistance and increase current to a value high enough to cause such violent muscular contraction that the welder cannot release contact with the live part.

3.2.6.10 Wearers of pacemakers or other electronic equipment vital to life should check with the life support manufacturers and their clinician to determine whether a hazard exists.

3.2.6.11 The welder shall never permit the live metal parts of an electrode or holder to touch bare skin or any wet covering of the body.

3.2.6.12 Insulation. Welders shall protect themselves from electrical contact with the work or ground by dry insulating material; particularly, they shall be protected against large area contacts by insulation when working in a sitting or prone position.

3.2.6.13 Adequately dry gloves in good condition are required.

3.2.6.14 Electrode holders shall be well insulated and kept in good repair.

3.2.6.15 Electrode holders shall not be cooled by immersion in water.

3.2.6.16 Water-cooled holders and guns shall not be used if any water leak or condensation exists which would adversely affect the welder's safety.

3.2.6.17 The welding machines that supply power to the arc shall always have the output electrically de-energized when tungsten electrodes are changed in gas tungsten arc electrode holders.

3.2.6.18 Other Practices to Avoid: The welder shall not coil or loop welding electrode cable around parts of the body. Precautions should be taken to prevent shock-induced falls when the welder is working above ground level.

3.2.7 Maintenance

3.2.7.1 General

3.2.7.1.1 All arc welding equipment shall be maintained in safe working order at all times. The welder or maintenance personnel shall report any equipment defect or safety hazard to the Supervisors, and the use of such equipment shall be discontinued until its safety has been assured. Qualified personnel shall make repairs only. Periodic inspections will be completed as follows:

3.2.7.1.1.1 Annual

3.2.7.1.1.1.1 Clean all internal components and wiring.

3.2.7.1.1.2 Quarterly

3.2.7.1.1.2.1 Inspect power cord

3.2.7.1.1.2.2 Inspect leads

3.2.7.1.1.2.3 Insure external labeling for legibility.

3.2.7.1.2 Welding equipment shall be maintained in good mechanical and electrical condition to avoid unnecessary hazards. Commutators shall be kept clean to prevent excessive flashing.

3.2.7.1.3 Welding equipment used in the open should be protected from inclement weather conditions. Protective covers should not obstruct the ventilation necessary to prevent overheating of the machine. Air filters

in the ventilating system of the electrical components are not recommended, unless provided by the manufacturer of the welding machine. The reduction of air flow resulting from the use of an air filter on equipment not so designated can subject internal components to an overheating condition and subsequent failure.

3.2.7.1.4 When it is necessary to modify equipment in order to meet noise level requirements, it should be determined that the modifications or additions to the equipment do not cause the electrical or mechanical ratings of the equipment to be exceeded or overloaded.

3.2.7.1.5 Machines, which have become wet shall be thoroughly dried and properly tested before being used. When not in use, the equipment should be stored in a clean, dry place.

3.2.7.1.6 Welding cable shall be inspected for wear or damage. Cables with damaged insulation or connectors shall be replaced or repaired to achieve the mechanical strength, insulating quality, electrical conductivity, and water tightness of the original cable. Joining lengths of cables shall be done by means specifically intended for the purpose. The connection means shall have insulation adequate for service conditions.

3.2.7.1.7 Use of compressed gases for shielding in arc welding operations shall follow the applicable provisions of Oxyfuel Gas Welding and Cutting.

WELDER MAINTENANCE PROGRAM

The following is the manufacturers required maintenance for welding units:

ANNUAL

Clean all internal components and wiring

QUARTERLY

Inspect power cord

Inspect leads

Insure external labeling for legibility

This maintenance will be performed by maintenance personnel with written reports completed and filed with this program.

WELDER MAINTENANCE INSPECTION FORM

Welder Make: _____ Model: _____
Serial Number: _____

Type of Inspection	Inspection Due Date	Date of Inspection	Inspector's Initials
ANNUAL	JANUARY	_____	_____
QUARTERLY	JANUARY	_____	_____
QUARTERLY	APRIL	_____	_____
QUARTERLY	JULY	_____	_____
QUARTERLY	OCTOBER	_____	_____

Welder Make: _____ Model: _____

Serial Number: _____

Type of Inspection	Inspection Due Date	Date of Inspection	Inspector's Initials
ANNUAL	JANUARY	_____	_____
QUARTERLY	JANUARY	_____	_____
QUARTERLY	APRIL	_____	_____
QUARTERLY	JULY	_____	_____
QUARTERLY	OCTOBER	_____	_____

WELDING HOT WORK PERMIT PROGRAM

A Hot Work Permit or Cutting and Welding Permit will be required whenever welding is done outside the maintenance area. Prior to permitting any maintenance related hot work on or in this facility, the following procedures will be fully adhered to by the person, or contractor, before work is permitted to begin. Only then will a Cutting & Welding Permit be issued.

If sprinklers are provided, ensure they are in service

Ensure cutting and welding equipment is in good repair

Be certain personal protective equipment is proper for job and in good repair

Floors swept clean of combustibles

Combustible floors covered or wet down

No combustibles or flammables in the area unless covered

All wall and floor openings covered

Fireproof beneath work to collect sparks or slag

Clean equipment on which welding is being performed

If a tank is to be welded, purge flammable vapors

Provide adequate ventilation

Provide for fire watch during and for 30 minutes after completing welding job.

Trained in use of alarm system

It shall be the Safety Director/Operations Manager's responsibility to ensure full compliance with this directive prior to issuance of the work permit.

HOT WORK PERMIT

This "Hot Work Permit" was developed for _____ and is required for any temporary operation involving generation, or use of, open flames; heat producing; and/or spark producing equipment or processes.

This shall include, but is not limited to, brazing; cutting; grinding; soldering; thawing pipe; torching; welding; hot roofing.

This hot work permit policy applies to any contractor who is performing new construction; repairs, renovations; alterations; or any other physical act which may generatr or develop the generation of hot work, as outlined.

Outside contractors are of particular concern since they are not familar with the building, contents, integrity, hazards, protection, or processes and they may not be supervised closely.

PERMIT- DATE: _____ Time: _____ AM __ PM __ EXPIRES - DATE: _____Time: _____ AM __ PM __

Address of building (of hot work operation):
Street: _____
City: _____ State: _____

Detail the exact location (floor, room, location inside the building):
_____
_____

Specifics: Type of hot work to be performed, ie:
welding, cutting, brazing - etc: _____
_____
_____
_____
_____

SUPERVISOR IN CHARGE: _____
EMPLOYEE(S) ó ó ó PERFORMING WORK:
(1) _____
(2) _____
(3) _____
(4) _____

PRECAUTION CHECKLIST **POST AT "HOT WORK" SITE ó For the duration of Hot Work Process**

Sprinkling system is available and serviceable: Yes __ No __
Or; Hose stream available and serviceable: Yes __ No __
Fire Extinguishers are available and serviceable: Yes __ No __
Hot work equipment in good repair: Yes __ No __
Proper employee eye protection worn Yes __ No __
Proper work boots worn: Yes __ No __

PRECAUTIONS WITHIN 15 FEET OF "HOT WORK" ZONE ó ó (Certain areas this may be 35 feet)

Flammable liquids, dust, and/or oily deposits removed: Yes __ No __
Combustible floors wetted down, covered w/damp sand or fire-resitive sheets: Yes __ No __
Explosive atmosphere in the area eliminated: Yes __ No __
Floors swept clean and clear of all combustible materials: Yes __ No __
Combustibles that are not removable - protected with metal shields: Yes __ No __
All wall and floor openings covered and protected: Yes __ No __
Fire resistive tarpaulins covering floor underneath the work zone: Yes __ No __

Enclosed equip cleaned of all combustibles: Yes __ No __

Containers purged of flammable liquid vapors
Yes __ No __

WORK ON WALLS OR CEILINGS

Construction is non-combustible: Yes __ No __
Combustibles moved away from other side of wall: Yes __ No __

CONFINED SPACE HOT WORK

If performing hot work in any confined space - refer to the "Confined Space" program in addition to this "Hot Work" permit.

I verify the above location has been examined, the necessary precautions checked out on the checklist, and all necessary steps have been taken to prevent fire, and permission is authorized for this work to begin.
Signature of person(s) doing "Hot Work". (1) _____ (2) _____
(3) _____ (4) _____ (5) _____

Signature of supervisor completing this permit: _____ Title: _____

A fire watch will be provided during the "Hot Work" process and for a continuous period for sixty (60) minutes after completion of the "Hot Work", including any coffee, lunch, or restroom breaks. The fire watch shall be provided the training in usage of fire extinguishers, charged water hose, sounding alarm. The person performing the fire watch shall be provided with necessary means of immediately notifying the local fire department, should they be needed.
The employee performing this "Fire Watch" is: _____
Fire Watch was performed from _____ am/pm until _____ am/pm. By: _____ Date: _____