

**SAFETY AND HEALTH PROGRAM
MANUAL**

For

**GATEWAY CONTRACTING, INC.
426 Edgewood Avenue South
Jacksonville, Florida 32254**

Section I

MANAGEMENT COMMITMENT AND INVOLVEMENT

POLICY STATEMENT

The management of this organization is committed to providing employees with a safe and healthful workplace. It is the policy of this organization that employees report unsafe conditions and do not perform work tasks if the work is considered unsafe. Employees must report all accidents, injuries, and unsafe conditions to their supervisors. No such report will result in retaliation, penalty, or other disincentive.

Employee recommendations to improve safety and health conditions will be given thorough consideration by our management team. Management will give top priority to and provide the financial resources for the correction of unsafe conditions. Similarly, management will take disciplinary action against an employee who willfully or repeatedly violates workplace safety rules. This action may include verbal or written reprimands and may ultimately result in termination of employment.

The primary responsibility for the coordination, implementation, and maintenance of our workplace safety program has been assigned to:

Name: Steve Mason

Senior management will be actively involved with employees in establishing and maintaining an effective safety program. Our safety program coordinator, myself, or other members of our management team will participate with you or your department's employee representative in ongoing safety and health program activities, which include:

- Promoting safety committee participation;
- Providing safety and health education and training; and
- Reviewing and updating workplace safety rules.

This policy statement serves to express management's commitment to and involvement in providing our employees a safe and healthful workplace. This workplace safety program will be incorporated as the standard of practice for this organization. Compliance with the safety rules will be required of all employees as a condition of employment.



Signature of President

Section II

EMPLOYEE PARTICIPATION

It is the policy of Gateway Contracting, Inc. to actively involve employees in the safety and health program.

To that end, employees are expected to help ensure the effectiveness of the safety and health program by performing the following tasks when required:

- Participate in weekly safety meetings.
- Perform periodic safety inspections in the workplace.
- Perform a Job Hazard Analysis prior to starting a task or whenever conditions change that might affect the safety of those performing the task.
- Participate in quarterly safety committee meetings.
- Make suggestions to management for improvement to the safety and health program.
- Stop any work activity that may present unforeseen safety and health hazards.
- Report all injuries, however minor, to management.
- Report all accidents to people and property to management.
- Report all near-miss incidents to management.

Section III

SAFETY AND HEALTH TRAINING

Safety and Health Orientation

Workplace safety and health orientation begins on the first day of initial employment or job transfer. Each employee has access to a copy of this safety manual, through his or her supervisor, for review and future reference, and will be given a personal copy of the safety rules, policies, and procedures pertaining to his or her job. Supervisors will ask questions of employees and answer specific procedures described in our workplace safety program manual. Their supervisors will instruct all employees that compliance with the safety rules described in the workplace safety manual is required.

Job-Specific Training

- Supervisors will initially train employees on how to perform assigned job tasks safely.
- Supervisors will carefully review with each employee the specific safety rules, policies, and procedures that are applicable and that are described in the workplace safety manual.
- Supervisors will give employees verbal instructions and specific directions on how to do the work safely.
- Supervisors will observe employees performing the work. If necessary, the supervisor will provide a demonstration using safe work practices, or remedial instruction to correct training deficiencies before an employee is permitted to do the work without supervision.
- All employees will receive safe operating instructions on seldom-used or new equipment before using the equipment.
- Supervisors will review safe work practices with employees before permitting the performance of new, non-routine, or specialized procedures.
- Supervisors will perform a Job Hazard Analysis prior to the start of any task.

Periodic Retraining of Employees

All employees will be retrained periodically on safety rules, policies and procedures, and when changes are made to the workplace safety manual.

Individual employees will be retrained after the occurrence of a work-related injury caused by an unsafe act or work practice, and when a supervisor observes employees displaying unsafe acts, practices, or behaviors.

Section IV

JOB HAZARD ANALYSIS

A job hazard analysis is to be performed prior to the start of any work related task. This is an effective way to determine and establish the safest work procedures for the task.

Any unsafe conditions or unsafe work procedures must be identified and either eliminated or controlled. If any hazards exist that pose an immediate danger to any employee's life or health, then immediate action should be taken to protect that employee.

Outline The Steps or Tasks

- All jobs can be broken down into steps or tasks. Observe the steps or tasks and write them down using the JHA form. Keep it simple and not too detailed.

Identify The Hazards

- What can go wrong? For example, an employee's hand could get caught in moving equipment.
- What are the consequences? An employee could lose a finger or a hand in moving equipment.
- How could it happen? Attempting to clear a machine while it is in operation.
- What are other contributing factors? Lockout/Tagout program not followed or non-existent.
- How likely is it that the hazard will occur? This requires some judgment. Were there near misses or actual incidents in the past?

Write Down The Safe Job Procedures

- Keep in mind the type of control measures that will be used to control the hazards that have been identified.
- Engineering controls eliminate or minimize the hazard through design, enclosing the hazard, isolation of the hazard, and removal or re-direction of the hazard.
- Administrative controls could include written work procedures, alarms, signs, or training.
- Personal protective equipment (PPE). Use when engineering controls are not feasible or do not control the hazard. Use when safe job procedures do not provide sufficient additional protection. Use during emergencies when engineering controls are not feasible.

JOB HAZARD ANALYSIS

Job Operation	Department	Supervisor
JHA Conducted By	Date Conducted	Reviewed By

Sequence of Basic Job Steps	Potential Hazards	Safe Job Procedures

Section V

FIRST AID PROCEDURES

EMERGENCY PHONE NUMBERS

Safety Coordinator: _____ Poison Control: _____

First Aid: _____ Fire Dept: _____

Ambulance: _____ Police: _____

Medical Clinic: _____

Clinic Address: _____

Minor First Aid Treatment

First aid kits are stored in the front office and in the employee break room. If you sustain an injury or are involved in an accident requiring minor first aid treatment:

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

Non-Emergency Medical Treatment

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

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

Emergency Medical Treatment

If you sustain a severe injury requiring emergency treatment:

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

First Aid Training

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

FIRST AID INSTRUCTIONS

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

WOUNDS:

Minor: Cuts, lacerations, abrasions, or punctures:

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

Major: Large, deep and bleeding:

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

BROKEN BONES:

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

BURNS:

Thermal (heat):

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

Chemical:

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

EYE INJURY:

Small Particles:

- Do not rub your eyes.
- Use the corner of a soft clean cloth to draw particles out, or hold the eyelids open and flush the eyes continuously with water.

Large or Stuck Particles:

- If a particle is stuck in the eye, do not attempt to remove it.
- Cover both eyes with bandage.

Chemical:

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

NECK AND SPINE INJURY:

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

HEAT EXHAUSTION:

- Loosen the victim’s tight clothing.
- Give the victim “sips” of cool water.
- Make the victim lie down in a cooler place with the feet raised.

Section VI

ACCIDENT INVESTIGATION

Accident Investigation Procedures

The supervisor at the location where the accident occurred will perform an accident investigation. The safety coordinator is responsible for seeing that the accident investigation reports are being filled out completely and that the recommendations are being addressed. Supervisors will investigate all accidents, injuries, and occupational diseases using the following investigation procedures:

- Implement temporary control measures to prevent any further injuries to employees.
- Review the equipment, operations, and processes to gain an understanding of the accident situation.
- Identify and interview each witness and any other person who might provide clues to the accident's causes.
- Investigate causal conditions and unsafe acts; make conclusions based on existing facts.
- Complete the accident investigation report.
- Provide recommendations for corrective actions.
- Indicate the need for additional or remedial safety training.

Accident investigation reports must be submitted to the safety coordinator within 24 hours of the accident.

ACCIDENT INVESTIGATION REPORT

REPORT # _____

COMPANY: _____

ADDRESS: _____

- 1. Name of injured: _____ S.S. # _____
- 2. Sex: () M () F Age: _____ Date of Accident: _____
- 3. Time of accident: _____ a.m. _____ p.m. Day of accident: _____
- 4. Employee's job title: _____
- 5. Length of experience on job: _____ (years) _____ (months)
- 6. Address of location where the accident occurred: _____

7. Nature of injury, injury type, and part of body affected: _____

8. Describe the accident and how it occurred: _____

9. Cause of the accident: _____

10. Was personal protective equipment required? () Y () N Was it provided? () Y () N
Was it being used?: () Y () N If no, explain: _____

11. Witness(es):

12. Safety training provided to the injured () Y () N If no, explain: _____

13. Interim corrective actions taken to prevent recurrence: _____

14. Permanent corrective action recommended to prevent recurrence: _____

15. Date of report: _____
Prepared by: _____

Supervisor (Signature) _____ Date _____

16. Status and follow up action taken by safety coordinator: _____

Safety Coordinator (Signature) _____ Date _____

INSTRUCTIONS FOR COMPLETING THE ACCIDENT INVESTIGATION REPORT

An accident investigation is not designed to find fault or place blame, but is an analysis of the accident to determine causes that can be controlled or eliminated.

(Items 1-6) Identification: This section is self-explanatory.

(Item 7) Nature of Injury: Describe the injury, e.g., strain, sprain, cut burn, fracture. **Injury type:** First aid- injury resulted in minor injury/treated on premises; Medical – injury treated off premises by physician; Lost time – injured missed more than one day of work; No Injury – no injury, near-miss type of incident. **Part of Body:** Part of body directly affected, e.g., foot, arm, hand, head.

(Item 8) Describe the accident: Describe the accident, including exactly what happened, and where and how it happened. Describe the equipment or materials involved.

(Item 9) Cause of the accident: Describe all conditions or acts which contributed to the accident, i.e.,

- Unsafe conditions – spills, grease on the floor, poor housekeeping or other physical conditions.
- Unsafe acts – unsafe work practices such as failure to warn, failure to use required personal protective equipment.

(Item 10) Personal protective equipment: Self-explanatory

(Item 11) Witness(es): List names, addresses, and phone numbers.

(Item 12) Safety training provided: Was any safety training provided to the injured related to the work activity being performed?

(Item 13) Interim corrective action: Measures taken by supervisor to prevent recurrence of incident, i.e., barricading accident area, posting warning signs, shutting down operations.

(Item 14): Self-explanatory

(Item 15): Self-explanatory

(Item 16): Follow-Up: Once the investigation is complete, the safety coordinator shall review and follow up the investigation to ensure that corrective actions recommended and approved by the employer are taken, and control measures have been implemented.

Section VII

RECORD KEEPING PROCEDURES

The safety coordinator will control and maintain all employee accident and injury records. Records are maintained for a minimum of five (5) years following the end of the year to which they relate and include:

- OSHA 300 Log of Work-Related Injuries & Illnesses; OSHA 300-A Summary of Work-Related Injuries & Illnesses.
- Accident Investigation Reports; Job Hazard Analyses.
- Worker's Compensation Notice of Injury Reports, which is used in lieu of OSHA 301 Injury and Illness Incident Report.

Section VIII

SAFETY RULES, POLICIES AND PROCEDURES

The safety rules contained in this section have been prepared to protect you in your daily work. Employees are to follow these rules, review them often and use good common sense in carrying out assigned duties.

TO ALL PERSONNEL: All personnel shall follow the rules outlined in this Safety and Health Procedures Manual.

ALL EMPLOYEES:

Housekeeping-

1. Use caution signs/cones to barricade slippery areas.
2. Do not store or leave items on stairways.
3. Return tools to their storage places after using them.
4. Do not block or obstruct stairwells, exits or accesses to safety and emergency equipment such as fire extinguishers or fire alarms.
5. Do not place materials such as boxes or trash in walkways and passageways.
6. Do not use gasoline for cleaning purposes.
7. Mop up water around drinking fountains, drink dispensing machines and ice machines.

Lifting Procedures-

General:

1. Test the weight of the load before lifting by pushing the load along its resting surface.
2. If the load is too heavy or bulky, use lifting and carrying aids such as hand trucks, dillies, pallet jacks and carts, or gets assistance from a co-worker.
3. Never lift anything if our hands are greasy or wet.
4. Wear protective gloves when lifting objects with sharp corners or jagged edges.

When Lifting:

1. Face the load.
2. Position your feet 6"-12" apart with one foot slightly in front of the other.
3. Bend at the knees, not at the back.
4. Keep your back straight.
5. Get a firm grip on the object using your hands and fingers. Use handles when they are present.
6. Hold the object as close to your body as possible.
7. Perform the lifting movements smoothly and gradually; do not jerk the load.
8. If you must change direction while lifting or carrying the load, pivot your feet and turn your entire body. Do not twist at the waist.

9. Set down objects in the same manner as you picked them up, except in reverse.
10. Do not lift an object from the floor to a level above your waist in one motion. Set the load down on a table or bench and then adjust your grip before lifting it higher.

Ladders and Step Ladders-

1. Read and follow the manufacturer's instructions label affixed to the ladder if you are unsure how to use the ladder.
2. Do not use ladders that have loose rungs, cracked or split side rails, missing rubber foot pads, or are otherwise visibly damaged.
3. Keep ladder rungs clean and free of grease. Remove buildup of material such as dirt or mud.
4. When performing work from a ladder, face the ladder and do not lean backward or sideways from the ladder.
5. Allow only one person on the ladder at a time.
6. Do not stand on the top two rungs of any ladder.
7. Do not stand on a ladder that wobbles, or that leans to the left or right of center.
8. Do not try to "walk" a ladder by rocking it. Climb down the ladder, and then move it.

Climbing a Ladder:

1. Face the ladder when climbing up or down it.
2. Do not carry items in your hands while climbing up or down a ladder.
3. Maintain a three-point contact by keeping both hands and one foot or both feet and one hand on the ladder at all times when climbing up or down the ladder.

Driving/Vehicle Safety-

Fueling Vehicles:

1. Turn the vehicle off before fueling.
2. Do not smoke while fueling a vehicle.
3. Wash hands with soap and water if you spill gasoline on your hands.

Driving Rules:

1. Shut all doors and fasten your seat belt before moving the vehicle.
2. Obey all traffic patterns and signs at all times.
3. Maintain a three-point contact using both hands and one foot or both feet and one hand when climbing into and out of vehicles.
4. Do not leave keys in an unattended vehicle.

OFFICE PERSONNEL:

Office Safety-

General:

1. Do not place material such as boxes or trash in walkways and passageways.
2. Do not throw matches cigarettes or other smoking materials into trash baskets.

3. Do not kick objects out of your pathway; pick them up or push them out of the way.
4. Keep floors clear of items such as paper clips, pencils, tacks or staples.
5. Straighten or remove rugs and mats that do not lie flat on the floor.
6. Mop up water around drinking fountains and drink dispensing machines.
7. Do not block your view by carrying large or bulky items; use a dolly or hand truck or get assistance from a fellow employee.
8. Store sharp objects such as pens, pencils, and letter openers or scissors in drawers or with the points down in a container.
9. Carry pencils, scissors and other sharp objects with the tips pointing down.
10. Use the ladder or step stool to retrieve or store items that are located above your head.
11. Do not run on stairs or take more than one step at a time.
12. Keep doors in hallways fully open or fully closed.
13. Use handrails when ascending or descending stairs or ramps.
14. Obey all posted safety and danger signs.

Furniture Use:

1. Open only one file cabinet drawer at a time. Close the fling cabinet drawer you are working on before opening another filing drawer in the same cabinet.
2. Use the handle when closing doors, drawers and files.
3. Put heavy files in the bottom drawers of the file cabinets.
4. Do not tilt the chair you are sitting in on its back two legs.
5. Do not stand on furniture to reach high places.

Equipment Use:

1. Do not use fans that have excessive vibration, frayed cords or missing guards.
2. Do not place floor type fans in walkways, aisles or doorways.
3. Do not plug multiple electrical cords into a single outlet.
4. Do not use extension or power cords that have the ground prong removed or broken off.
5. Do not use frayed, cut or cracked electrical cords.
6. Use a cord cover or tape the cord down when running electrical cords across aisles, between desks or across entrances or exits.
7. Turn the power switch of the local exhaust fans to "On" when operating the blueprint machine.
8. Do not use lighting fluid to clean drafting equipment; use soap and water.

JOURNEYMEN/MECHANICS:

General Rules:

1. Do not use a metal ladder on rooftops or within 50 feet of electrical power lines.
2. Do not block the walking surfaces of elevated working platforms, such as scaffolds, with tools or materials that are not being used.
3. Do not work outdoors during lightning storms.

4. Do not stand on sinks, toilets or cabinets; use a stepladder.
5. Do not work on open sided floors, elevated walkways or elevated platforms if there are not guardrails in place.
6. Stand clear of floor openings if guardrails or covers are removed or displaced.

Heat Exhaustion/ Sun Exposure:

1. Keep your shirt on to avoid dehydration and sunburn.
2. Drink plenty of clear liquids during your breaks.
3. Take breaks in shaded areas.

Work Area Protection:

1. Place signs (lights) well in advance of the work area to permit upcoming motorists time to react.
2. Erect protective barriers or guards and warning signs prior to removing manhole covers or making excavations where accessible by vehicular or pedestrian traffic.
3. Position the work vehicle to guard the work area while work is in progress.

Personal Protective Equipment:

1. Do not wear had hats that are dented or cracked.
2. Wear your safety glasses when operating drills and when cutting or snipping copper or light gauge wire.
3. Wear your safety goggles when welding or soldering.
4. Do not continue to work if your safety glasses become fogged. Stop work and clean the glasses until the lenses are clear and defogged.
5. Wear the dielectric gloves when working on electric current.
6. Do not wear jewelry or coats with metal zippers to work.
7. Wear earplugs or earmuffs in areas posted "Hearing Protection Required".

Electrical Powered Tools:

1. Do not use power equipment or tools on which you have not been trained.
2. Keep power cords away from path of drills and wire soldering and cutting equipment.
3. Do not use cores that have splices, exposed wires or cracked or frayed ends.
4. Disconnect the tool from the outlet by pulling on the plug, not the cord.
5. Turn the tool off before plugging or unplugging it.
6. Do not carry plugged in equipment or tools with your finger o the switch.
7. Do not leave tools that are "On" unattended.
8. Do not handle or operate electrical tools when your hands are wet or when you are standing on wet floors.
9. Turn off the electrical tool and unplug it from the outlet before attempting repairs or service work. Tag the tool "Out of Service".
10. Do not use extension cords or other three pronged power cords that have a missing prong.
11. Do not remove the ground prong from electrical cords.
12. Do not use an adapter such as a cheater plug that eliminates the ground.

13. Do not plug multiple electrical cords into a single outlet.
14. Do not stand in water or on wet surfaces when operation power hand tools or portable electrical appliances.
15. Never operate electrical equipment barefooted. Wear rubber-soled or insulated work boots.
16. Do not operate a power hand tool or portable appliance that has a frayed, worn, cut, improperly spliced or damaged cord, or that has a two-pronged adapter or a two conductor extension cord, or if a prong from the three pronged power plug is missing or has been removed.
17. Do not operate a power hand tool or portable appliance while holding a part of the metal casing or while holding the extension cord in your hand. Hold all portable power tools by the plastic handgrips or other nonconductive areas designed for gripping purposes.
18. Do not use electrical tools if its housing is cracked.
19. Do not use electrical tools while working on a metal ladder unless the ladder has rubber feet.

Power Saws:

1. Wear safety goggles, protective gloves, a dust mask and hearing protection when operating a power saw.
2. Do not wear loose clothing or jewelry.
3. Clean any residue from the blade or cutting head before making a new cut with the power saw.
4. Do not use a power saw that has cracked, broken, or loose guards or other visible damage.
5. Keep your hands away from the exposed blade.
6. Operate the saw at full cutting speed, with a sharp blade, to prevent kickbacks.
7. Do not alter the anti-kick back device or blade guard.
8. Do not perform cutting operations with the power saw while standing on a wet or slippery floor.
9. When using the power saw, do not reach across the cutting operation.
10. Cut away from your body and below your shoulder level when you are using a power saw.
11. If the saw becomes jammed, turn the power switch of the saw off before pulling out the incomplete cut.

Machine/Equipment Safety:

1. Replace the guards before starting machines, or after making adjustments or repairs to the machine.
2. Do not remove, alter or bypass any safety guards or devices when operating any piece of equipment or machinery.
3. Read and obey safety warnings posted on or near any machinery.

Lockout/Tagout:

1. Notify all affected employees of the impending lockout situation, the reason for it, and estimated start and duration times.

2. Place the breaker or switch in the off or safe position.
3. Lockout and tagout all in line points of control. In most cases, this may be more than one place or more than one lock if several people are working on the equipment.
4. Lockout verification: (a.) Verify that the locked out switch or control cannot be overridden. (b) Test the equipment to be certain that the locked out switch is de-energized and not simply malfunctioning. (c) Press all start buttons to see if the equipment starts. (d) Ensure the system you will be working on is the same one that has been locked out.
5. All locks and tags are to be left in place until work is completely finished. A lock is never to be removed except by the person who placed it there. Only immediate supervisors are to authorize emergency removal of a lock or tag.
6. Before restarting the equipment, verify the following: (a) All tools and other items have been removed. (b) All machine guards are in place. (c) All electric systems are reconnected. (d) All employees are clear of equipment.

Portable Welding/Soldering Operations:

1. Do not perform welding or soldering tasks while wearing wet cotton gloves or wet leather gloves.
2. Use the insulated work gloves when using welding or soldering equipment.
3. Do not use the welding or soldering apparatus if the power cord is cut, frayed, split or otherwise visibly damaged or modified.
4. Do not perform "hot work" such as welding, soldering or other spark producing operations within 50 feet of containers labeled "Flammable" or "Combustible".

Hand Tool Safety:

1. Use tied off containers to keep tools from falling off of scaffolds and other elevated work platforms.
2. Keep the blade of all cutting tools sharp.
3. Carry all sharp tools in a sheath or holster.
4. Do not use a tool if its handle has splinters, burrs, cracks, and splits or if the head of the tool is loose.
5. Do not use impact tools such as hammers that have mushroomed heads.
6. When handing a tool to another person, direct sharp points and cutting edges away from yourself and the other person.
7. When using knives, shears or other cutting tools, cut in a direction away from your body.
8. Do not carry sharp or pointed hand tools such as screwdrivers in your pocket unless the tool or your pocket is sheathed.
9. Do not perform "make-shift" repairs to tools.
10. Do not throw tools from one location to another, from one employee to another, from scaffolds or other elevated platforms.
11. Do not carry tools in your hand when climbing. Carry tools in tool belts or hoist the tools to the work area with a hand line.
12. Transport hand tools only in toolboxes or tool belts. Do not carry tools in your clothing.

Hammers:

1. Do not strike nails or other objects with the “cheek” of the hammer.
2. Do not strike one hammer against another hammer.
3. Do not use a hammer if your hands are oily, greasy or wet.

Screwdrivers:

1. Always match the size and type of screwdriver blade to fit the head of the screw.
2. Do not hold the work piece against your body while using a screwdriver.
3. Do not put your fingers near the blade of the screwdriver when tightening a screw.
4. Use a drill or a nail to make a starting hole for screws.
5. Do not force a screwdriver by using a hammer or pliers on it.
6. When you are performing electrical work, use the screwdriver that has the blue handle; this screwdriver is insulated.
7. Do not carry a screwdriver in your pocket.
8. Do not use a screwdriver if your hands are wet, oily or greasy.
9. Do not use a screwdriver to test the charge of a battery.
10. When using a spiral ratchet screwdriver, push down firmly and slowly.

Pliers:

1. Do not attempt to force pliers by using a hammer on them.
2. When you are performing electrical work, use the pliers that have the blue rubber sleeves covering the handle; these pliers are insulated.
3. Do not use pliers that are cracked, broken or sprung.
4. When using diagonal cutting pliers, shield the loose pieces of cut material from flying into the air by using a cloth or your gloved hand.

Wrenches:

1. Do not use wrenches that are bent, cracked, badly chipped or that have loose or broken handles.
2. Do not use a shim to make a wrench fit.
3. Size the adjustable wrench to fit the nut before turning.
4. Use a split box wrench on flare nuts.
5. Do not use a wrench that has broken or battered points.
6. Discard any wrench that has spread, nicked or battered jaws or if the handle is bent.
7. Use box or socket wrenches on hexagon nuts and bolts as a first choice, and open-end wrenches as a second choice.

Saws:

1. Keep control of saws by releasing downward pressure at the end of the stroke.
2. Do not use a saw that has dull saw blades.
3. Oil saw blades after each use of the saw.
4. Keep your hands and fingers away from the saw blade while you are using the saw.
5. Do not carry a saw by the blade.

6. When using a hand saw, hold the work piece firmly against the worktable.

Clamps:

1. Do not use the C-clamp for hoisting materials.
2. Do not use the C-clamp as a permanent fastening device.

Tool Boxes/Chest/Cabinet:

1. Use the handle when opening and closing a drawer or door of a toolbox, chest, or cabinet.
2. Tape over or file off sharp edges on toolboxes, chests or cabinets.
3. Do not stand on toolboxes, chests or cabinets to gain extra height.
4. Lock the wheels on large toolboxes, chests or cabinets to prevent them from rolling.
5. Push large chests, cabinets, and toolboxes; do not pull.
6. Do not open more than one drawer of a toolbox at a time.
7. Close and lock all drawers and doors before moving the tool chest to a new location.
8. Do not use a toolbox or chest as a workbench.
9. Do not move a toolbox, chest or cabinet if it has loose tools or parts on the top.

Knives/Sharp Instruments:

1. When handling knife blades and other cutting tools, direct sharp points and edges away from you.
2. Cut in the direction away from your body when using knives.
3. Store knives in knife blocks or I sheaths after using them.
4. Use the knife that has been sharpened; do not use knives that have dull blades.
5. Use knives for the operations for which they are made.
6. Do not use knives that have broken or loose handles.
7. Do not use knives as screwdrivers.
8. Do not pick up knives by their blades.
9. Carry knives with their tips pointed towards the floor
10. Do not carry knives or other sharp tools in your pockets unless they are first placed in their sheath or holder.

Scaffolding:

1. Follow the manufacturer's instructions when erecting the scaffold.
2. Do not work on scaffolds outside during stormy or windy weather.
3. Do not climb on scaffolds that wobble or lean to one side.
4. Initially inspect the scaffold prior to mounting it. Do not use a scaffold if any pulley, block, hook or fitting is visibly worn, cracked, rusted or otherwise damaged. Do not use a scaffold if any rope is frayed, torn or visibly damaged.
5. Do not use any scaffold tagged "Out of Service".
6. Do not use unstable objects such as barrels, boxes, loose brick or concrete blocks to support scaffold or planks.
7. Do not work on platforms or scaffolds unless they are fully planked.
8. Do not use a scaffold unless guardrails and all flooring are in place.

9. Level the scaffold after each move. Do not extend adjusting leg screws more than 12 inches.
10. Do not walk or work beneath a scaffold unless a wire mesh has been installed between the midrail and the toe board or planking.
11. Use your safety belts and lanyards when working on scaffolding at a height of 10 feet or more above ground level. Attach the lanyard to a secure member of the scaffold.
12. Do not climb the cross braces for access to the scaffold. Use the ladder.
13. Do not jump from, to, or between scaffolding.
14. Do not slide down cables, ropes or guys used for bracing.
15. Keep both feet on the decking. Do not sit or climb on the guardrails.
16. Do not lean out from the scaffold. Do not rock the scaffold.
17. Keep the scaffold free of scraps, loose tools, tangled lines and other obstructions.
18. Do not throw anything “overboard” unless a spotter is available. Use the debris chutes or lower things by hoist or by hand.
19. Do not move a mobile scaffold if anyone is on the scaffold.
20. Chock the wheels of the rolling scaffold using the wheel blocks and lock the wheels by using your foot do depress the wheel lock before using the scaffold.

Lifting Equipment (chains, cables, ropes, slings, etc.):

1. Do not use chain slings if links are cracked, twisted, stretched or bent.
2. Fabricate all wire I wire rope slings by using thimbles; do not form eyes by using wire clips or knots.
3. Do not shorten slings by using makeshift devices such as knots or bolts.
4. Do not use a kinked chain.
5. Protect slings fro the sharp edges of their loads by placing pads over the sharp edges of the items that have been loaded.
6. Do not place your hands between the sling and its load when the sling is being tightened around the load.
7. Do not alter or remove the safety latch on hooks. Do not use a hook that does not have a safely latch, or if the safety latch is bent.
8. Lift the load fro the center of hooks, not fro the point.

Confined spaces:

1. Do not enter the confined space without reading and following the “confined space entry procedure”.
2. Obtain a confined space entry permit from your supervisor before entering a confined space.

Prior to Entry:

1. Get locking devices and labels from your supervisor to lock out and tag “out of Service” all equipment in the confined space before entering the confined space.
2. Open all windows, doors or manholes of the confined space for ventilation.
3. Use a combustible gas analyzer to test the confined space for an oxygen deficiency or accumulated combustible gases. Do not enter the confined space i f

the reading for the combustible gas analyzer is above 10% LFL and the oxygen level is below 19.5% or greater than 23.5%.

When Entering:

1. Do not enter the confined space unless an assigned observer or lookout person is posted at the entrance to the confined space. If you are assigned as the outside observer, do not go inside the confined space under any circumstances and keep the entrant in your view at all times.
2. Stay in constant view of the observer when you are working inside the confined space.

Access and Egress Safety:

1. Use ladders, structural ramps or stairways as a means of access or egress from excavations or restricted spaces.
2. Do not climb a ladder unless it extends at least three feet or three rungs beyond the edge of the trench.

STOREROOM/STOCKROOM PERSONNEL:

General Storeroom/Stockroom Safety:

1. Wear leather gloves when handling materials such as copper or aluminum wire.
2. Do not attempt to catch falling materials.
3. Do not try to kick objects out of pathways. Push or carry them out of the way.
4. Move slowly when approaching blind corners.
5. Do not run on stairs or take more than one step at a time.
6. Do not jump from elevated places such as truck beds, platforms or ladders.
7. Do not lift slippery or wet objects; use a hand truck.
8. Obey all safety and danger signs posted in the workplace.

General Housekeeping:

1. Do not place material such as boxes or trash in walkways and passageways.
2. Do not store or leave items on stairways.
3. Do not block or obstruct stairwells, exits or accesses to safety and emergency equipment such as fire extinguishers or fire alarms.
4. Return tools to their storage places after using them.
5. Straighten or remove rugs and mats that do not lie flat on the floor.
6. Mop up water around drinking fountains; drink dispensing machines and ice machines.
7. Use caution signs or cones to barricade slippery areas such as freshly mopped floors.

Knives/Sharp Instruments:

1. When handling knife blades and other cutting tools, direct sharp points and edges away from you.
2. Cut in the direction away from your body when using knives.

3. Store knives in knife blocks or in sheaths after use.
4. Use the knife that has been sharpened; do not use knives that have dull blades.
5. Do not use honing steels that do not have disc guards.
6. Do not attempt to catch a falling knife.
7. Use knives for the operation for which they are made.
8. When opening cartons use safety box cutters. Do not cut with the blade extended beyond the guard.
9. Do not use knives that have broken or loose handles.
10. Do not pick up knives by their blades.
11. Carry knives with their tips pointed towards the floor.
12. Do not carry knives, scissors or other sharp tools in your pockets unless they are first placed in their sheath or holder.

Stocking Shelves:

1. When stocking shelves by hand, position the materials to be shelved slightly in front of you, so you do not have to twist when lifting and stacking materials.
2. Place items on shelves so that they lie flat and do not wobble.
3. Place heavier loads on the lower or middle shelves.
4. Do not stack bulky merchandise on crushed boxes.
5. Do not let items overhang from shelves into walkways.
6. Remove one object at a time from shelves.
7. Do not climb the racking to stock or retrieve merchandise; use a ladder.

Handling Chemicals:

1. Follow the instructions on the label and the corresponding Material Safety Data Sheet (MSDS) for each chemical product you will be using in your workplace.
2. Do not use protective clothing or equipment that has split seams, pinholes, cuts, tears, or other visible signs of damage.
3. Each time you use your gloves; wash them before removing the gloves, using cold tap water and normal hand washing motion. Always wash your hands after removing the gloves.
4. Do not use chemicals from unlabeled containers and unmarked cylinders.
5. Do not drag containers labeled "Flammable".
6. Do not store chemical containers labeled "Flammable" near sources of ignition such as portable heaters.
7. Do not handle or load any containers of chemicals if their containers are cracked or leaking.

Compressed Gas Cylinders:

1. Do not handle oxygen cylinders if your gloves are greasy or oily.
2. Store all compressed gas cylinders in the upright position.
3. Place valve protection caps on compressed gas cylinders that are in storage or are not being used.
4. Do not lift compressed gas cylinders by the valve protection cap.
5. Do not store compressed gas cylinders in areas where they can come in contact with chemicals labeled "Corrosive".

6. Hoist compressed gas cylinders on the cradle, sling board, and pallet or compressed gas cylinder basket.
7. Do not place compressed gas cylinders against electrical panels or live electrical cords where the cylinder can become part of the circuit.

Section IX

LOCKOUT/TAGOUT

The control of hazardous energy is the purpose of the Lockout/Tagout Program. This program establishes the requirements for isolation of both kinetic and potential electrical, chemical, thermal, hydraulic and pneumatic and gravitational energy prior to equipment repair, adjustment or removal. References: OSHA 29 CFR 1910. 147, the control of hazardous energy and OSHA 29 CFR 1926.417.

The improper use of or the failure to use proper Lockout/Tagout procedures may result in electrical shock, chemical exposure, skin burns, lacerations, amputations, fire, explosions, eye injury, or death.

Only authorized and trained employees shall engage in tasks that require the use of Lockout/Tagout procedures.

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

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

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

Authorized Employees Training

All installation/service employees and supervisors will be trained to use the Lockout/Tagout Procedures. The Safety Coordinator will conduct the training at the time of initial hire. Retraining shall be held at least annually. The training will consist of the following:

- Review of general procedures.
- Review of specific procedures for machinery, equipment, and processes.
- Location and use of specific procedures.
- Procedures when questions arise.

Affected Employee Training

- Only trained and authorized employees will repair, replace, or adjust machinery, equipment, or processes.
- Affected employees may not remove locks, locking devices or tags from machinery, equipment, or circuits.
- Affected employees will be trained in the purpose and use of Lockout/Tagout procedures.

Other Employee Training

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

Preparation for Lockout/Tagout Procedures

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

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

Routine Maintenance & Machine Adjustments

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

Locks, Hasps and Tags

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

General Lockout/Tagout Procedures

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

- ***Preparation for Shutdown.*** Before authorized or affected employees turn off a machine or piece of equipment, the authorized employee will have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the means to control the energy.
- Notify all affected employees that the machinery, equipment or process will be out of service
- ***Machine or Equipment Shutdown.*** The machine or equipment will be turned off or shut down using the specific procedures for that specific machine. An orderly shutdown will be utilized to avoid any additional or increased hazards to employees because of equipment de-energization.
- If the machinery, equipment or process is in operation, follow normal stopping procedures (depress stop button, open toggle switch, etc.).
- Move switch or panel arms to "Off" or "Open" positions and close all valves or other energy isolating devices so that the energy source(s) is disconnected or isolated from the machinery or equipment.
- ***Machine or Equipment Isolation.*** All energy control devices that are needed to control the energy to the machine or equipment will be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.

- ***Lockout or Tagout Device Application.*** Authorized employees will affix lockout or tagout devices to energy isolating devices. Lockout devices will be affixed in a manner that will hold the energy isolating devices from the "safe" or "off" position.
- Where tagout devices are used, they will be affixed in such a manner that will clearly state that the operation or the movement of energy isolating devices from the "safe" or "off" positions is prohibited.
- The tagout devices will be attached to the same point a lock would be attached. If the tag cannot be affixed at that point, the tag will be located as close as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.
- Lock and tag out all energy devices by use of hasps, chains and valve covers with an assigned individual locks.
- ***Stored Energy.*** Following the application of the lockout or tagout devices to the energy isolating devices, all potential or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.
- Where the re-accumulation of stored energy to a hazardous energy level is possible, verification of isolation will be continued until the maintenance or servicing is complete.
- Release stored energy (capacitors, springs, elevated members, rotating fly wheels, and hydraulic/air/gas/steam systems) must be relieved or restrained by grounding, repositioning, blocking and/or bleeding the system.
- ***Verification of Isolation.*** Prior to starting work on machines or equipment that have been locked or tagged out, the authorized employees will verify that isolation or de-energization of the machine or equipment have been accomplished.
- After assuring that no Employee will be placed in danger, test all lock and tag outs by following the normal start up procedures (depress start button, etc.).
- **Caution:** After Test, place controls in neutral position.
- ***Extended Lockout/Tagout.*** Should the shift change before the machinery or equipment can be restored to service, the lock and tag out must remain. If the task is reassigned to the next shift, those employees must lock and tag out before the previous shift may remove their lock and tag.
- ***Release from Lockout/Tagout.*** Before lockout or tagout devices are removed and the energy restored to the machine or equipment, the following actions will be taken:
 - The work area will be thoroughly inspected to ensure that nonessential items have been removed and that machine or equipment components are operational.

- The work area will be checked to ensure that all employees have been safely positioned or removed. Before the lockout or tagout devices are removed, the affected employees will be notified that the lockout or tagout devices are being removed.
- The employee who applied the device will remove each lockout or tagout device from each energy-isolating device.

Section X

Fall Protection

The purpose of a fall protection program is to ensure that all work areas are free from fall hazards; that all employees are properly trained in the recognition of fall hazards, and that any fall prevention system which may be used is inspected and monitored to ensure effectiveness when preventing a fall to a lower level.

It is the policy of Gateway Contracting, Inc. to take all practical measures possible to prevent employees from being injured by falls. We will take necessary steps to eliminate, prevent, and control fall hazards. We will comply fully with the OSHA Fall Protection standard 29 CFR 1926, Subpart M, Fall Protection. The first priority is given to the elimination of fall hazards. If a fall hazard cannot be eliminated, then effective fall protection will be planned, implemented, and monitored to control the risks of injury due to a fall.

All employees exposed to potential falls to a lower level of 6 feet or more will be trained to minimize exposure to a fall by a Competent Person. Fall protection equipment will be provided and its use required by all employees. Supervisors will be responsible for implementation of a fall protection plan for their jobsite.

Hazard Identification

The supervisor on each jobsite will be responsible for identifying fall hazards on their jobsite. The supervisor will evaluate each situation or work procedure where employees may be exposed to a fall of 6 feet or more. The supervisor will be responsible for developing a plan to eliminate the exposures, if possible, or to select the appropriate fall protection systems and/or equipment. Each supervisor will be trained as a Competent Person with respect to fall protection.

OSHA defines a Competent Person as, "...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 action to eliminate them."

Fall Arrest Systems

Supervisors will determine upon inspection of the work area, if a fall protection system in use is adequate and meets the relevant OSHA standard. If a guardrail system or a safety net is determined to be inadequate, then personal fall arrest systems will be required to be used by employees to minimize potential falls.

Fall arrest systems are used in conjunction with full body harnesses to protect workers from serious or fatal injuries in the event of a fall from a height. There are two basic types: Vertical and Horizontal.

A vertical system uses a single fixed anchor to which is attached a lifeline, lanyard or retraction system. Any line, lanyard or retraction system subjected to a load due to a fall must be removed from service - they may not be used again unless they have been re-certified.

Design Requirements

- The fixed anchor point must be capable of withstanding a minimum dead weight of at least 5,000 pounds for each employee and must not be the same points used for suspending platforms.
- Lanyards and lifelines must have a minimum breaking strength of at least 5000 pounds.
- One lanyard or lifeline is required for each employee exposed to fall hazards
- Self-retracting lines and lanyards that limit fall distance to 2 feet or less must be able to withstand a 3000-pound force.
- Protection systems that limit fall to greater than 2 feet must meet a 5000-pound force design requirement.
- All strength components for lines and lanyards must be made from synthetic fibers.

Rigging requirements

- Fall protection systems must be setup and used under the supervision of a Competent Person designated by the employer
- The setup must limit falls to less than 6 feet and prevent contact with any lower surface
- Deceleration distance must be 3.5 feet or less
- The arresting force of a fall on the body must be limited to 1800 pounds or less

Horizontal fall arrest systems are classified as rigid or flexible lifeline types. A qualified engineer must design these, or a manufacturer who must specify what type of equipment may be used in conjunction with the system

A flexible horizontal lifeline is a line rigged in a horizontal plane secured at each end to an anchorage. This setup allows the employee, using a personal fall arrest system, to move between the two anchor points. Generally, the system is rigged overhead to ensure fall arrest distances are not exceeded and to prevent swinging in the event of a fall.

The design of these types of life lines are very complex due to the numerous geometric conditions and possible fall distances and forces involved with a non-rigid sliding system. For permanent systems, wire rope is used since synthetic ropes can be damaged over time by environmental conditions such as fumes, gases and exposure to ultra-violet

light. Temporary systems must be engineered systems that come with complete instructions for setup and use.

Design - Two factors that must be considered in designing a flexible horizontal lifeline system include:

- Maximum load applied to the anchorages during a fall arrest event.
- Amount of deflection of the lifeline during a fall arrest event.
- Distance to potential impact points
- Restraint distance of the lanyard attached to the body harness

Anchorage requirements - Horizontal lifelines may, depending on their geometry and angle of sag, be subjected to greater loads than the impact load imposed by an attached component. When the angle of horizontal lifeline sag is less than 30 degrees, the impact force imparted to the lifeline by an attached lanyard is greatly amplified. For example, with a sag angle of 15 degrees, the force amplification is about 2:1 and at 5 degrees sag, it is about 6:1. Depending on the angle of sag and the line's elasticity, the strength of the horizontal lifeline and the anchorages to which it is attached should be increased a number of times over that of the lanyard.

Rigid horizontal fall arrest systems are designed and constructed from materials such as pipes, metal channels, or I-beams with a sliding trolley that moves along the horizontal path which provides a continuous horizontal anchor point for the personal fall arrest systems. These are normally mounted at shoulder height or higher based on the particular work site situations. Lanyards are attached to the trolley system and can be set lengths, or self-retracting type.

Design

A qualified engineer must design any rigid horizontal fall arrest system. Anchoring of the rigid system can be done from existing structure or new structure specifically designed for the fall arrest system. The sliding trolley must move freely along the rigid horizontal member, trailing behind the worker a short distance. If the trolley does not freely slide, the worker is could be subjected to a dangerous lateral swing during a fall. All trolleys used in fall arrest systems must be "man rated" by the manufacturer.

Full Body Harnesses

A full-body harness has straps worn around the trunk and thighs, with one or more D-rings in back to attach the harness to other parts of the system. A properly fitted harness spreads the stopping force over a large section of the body - thighs, pelvis, chest, and shoulders. Using a body belt or chest harness instead of a full body harness can cause injury in a fall.

- Use a harness with an anchorage, a lanyard, a retractable lifeline, a vertical lifeline, a travel rail, a horizontal lifeline, a fall arrester, and/or a shock absorber.

- A fall-arrest system should let you fall no more than 6 feet. A work-positioning device should let you fall only 2 feet or less.
- A registered professional engineer is required to design a fall protection system. A qualified person must supervise the setup of the system.
- Make sure the harness fits and is comfortable, to prevent body strain. Shoulder and back pads are available as accessories - these help reduce harness pressure. Full-body cross-chest harnesses are more comfortable for women and can reduce bruising when falls are stopped.

Using a Harness

Follow manufacturers' instructions for wearing harnesses. These instructions must be available to employees.

Donning a Body Harness

- Carefully look over the harness.
- Hold the harness by the back D-ring and shake it so all straps fall in place.
- Slip the straps over your shoulders so the D-ring is in the middle of your back.
- Connect the chest and/or waist straps. These straps should fit snug.
- Reach between your legs and connect one long strap to the buckle or closure on your thigh. Repeat with the second strap.
- After you connect both straps, pull them tight. The harness should be snug but let you move freely.
- Connect the harness to the right fall-protection system.
- Make sure your anchor point is approved for the way you will use it. If you are not sure, check with the competent person for the job.
- Never use gear that has already been in a fall, unless it has been re-certified by the manufacturer.

Rescue

Employees who fall in a harness may not be able to rescue themselves. A rescue plan is needed for each possible fall situation. Be sure medical and rescue teams can access the scene quickly if needed. Hanging in a harness for a long time can endanger an employee. An employee who falls may have other injuries.

Criteria for Equipment Pre-Issue Inspection

If the equipment looks as if it needs repair – or it is time for maintenance – tag it, “Do not use,” and remove it from service.

- Inspect equipment before each use. A competent person should inspect it at least once each year.
- Follow all manufacturer instructions about inspecting, caring for, and storing the equipment.

- After conducting the manufacturers recommended inspection, look for:
 - Missing or unreadable markings or warnings
 - Missing parts
 - Damage to **metal parts** – any changes, cracks, sharp edges, distortion, corrosion, chemical damage, too much heating, or too much wear
 - Defects in or damage to **straps or ropes** – any changes, fraying, unsplicing, unlaying, kinking, knotting, roping, broken or pulled stitches, abrasion, excessive oiling, or sections that are too old, too worn, or too dirty
 - Missing parts or signs of defects in or damage to – or improper working of – mechanical **parts and connectors**.

Section XI

Aerial & Scissors Lift Safety

Purpose

The purpose of this section is to outline policies and procedures for the safe operations of scissors lift and aerial lifts operated by Gateway Contracting, Inc. employees. It applies to all operations, programs and locations that require employees to access elevated locations and/or use aerial work platforms.

Definitions

Aerial Lift – A piece of equipment, extendable and/or articulating, designed to position personnel and/or materials in elevated locations.

ANSI – American National Standards Institute.

Lanyard – ANSI approved line designed for supporting one person, with one end connected to a safety harness and the other end attached to a suitable anchorage able to support 5,400 pounds of force. The anchorage can be a structural steel member, an approved lifeline, or other approved anchorage points.

Full Body Harness – ANSI approved body device designed for fall protection, which by reason of its attachment to a lanyard and safety line or an approved anchorage point, which will limit a fall to six (6) feet or less.

Fall Protection

Full body harnesses and lanyards shall only be used, as intended by the manufacturer, for employee fall protection. Appropriate devices shall be used to provide 100% fall protection. The "D" ring on the body harness shall be positioned in the back up between the shoulder blades to minimize impact forces of the body in the event of a fall.

All fall protection equipment shall be carefully inspected prior to each use and periodically throughout the day. Safety equipment showing any signs of mildew, torn or frayed fabric or fiber, burns, excessive wear, or other damage or deterioration which could cause failure shall be permanently removed from service. All fall protection equipment shall be properly maintained and stored when not in use. This includes keeping dry and out of sunlight, away from caustics, corrosives or other materials that could cause defects.

Employees in the bucket or platform of any aerial lift device shall wear hard hats and safety harnesses. Other safety personal protective items may be required by either company or client safety policies.

Equipment

Aerial lift devices shall conform to ANSI Standards applicable to the type of equipment being used – bucket truck, under-bridge inspection vehicle, portable and/or self-propelled personnel lift. Aerial lift devices shall only be used for the purpose(s) intended by the manufacturer. All manufacturer and maintenance department recommendations and warnings regarding operation, capacity and safety precautions shall be strictly followed. Permanent labeling must be conspicuously posted to indicate lifting capacity and travel height.

Only devices approved for lifting personnel shall be used as aerial lifts. Loaders, forklifts or other material lift devices shall NOT be used to transport employees to elevated locations nor as work platforms. Forklifts and cranes may ONLY be used as a last resort, and then only with approved personnel baskets.

Modifications shall not be made to any aerial lift device without the expressed written authorization from the manufacturer. Buckets and bucket liners shall not be drilled, cut, welded, etc.

Procedures

Lift equipment shall be inspected upon delivery to the jobsite, and daily prior to use. The daily inspection will include testing the controls prior to use, and all inspections shall be documented on the Aerial Lift Daily Inspection form.

Before extending or raising the boom or platform, outriggers (if so equipped), shall be positioned properly and the lift will be level. Outriggers shall be placed on mud mats or other SOLID surface, and shall not be used to level the vehicle. If the lift is on unlevelled ground, the wheels shall be chocked and the parking brake set. Sufficient clearance shall be checked before raising the lift. For under-bridge units, adequate clearance beneath the boom shall be assured.

Employees shall keep both feet on the floor of the bucket or platform at all times. When the lift has to be moved, it shall only be moved when the bucket or platform is at the lowered position. For scissors lifts, this is lowered all the way down, and for aerial lifts, this is lowered to the lowest point that the operator can safely see to drive the vehicle.

Employees are required to wear full body safety harnesses with lanyards. The lanyards shall be attached to an engineered anchorage point inside the lift. Do not wrap the lanyard around a rail and tie back onto itself. Employees are not to anchor on structural members outside of the lift, unless exiting the lift to get on the structural members.

Platform lifts (scissors lifts) shall have a top and mid rail and a kick plate (toe board), along with an engineered anchorage point to tie off. Employees shall not climb nor stand on the mid or top rails, keeping both feet on the floor of the platform.

Tools, parts or any materials shall not be dropped or thrown from the bucket or platform. When using welding or heating equipment from the bucket or platform, the vehicle shall be protected from sparks and slag and special care shall be taken to remove flammable objects away from the lifts.

Electrical Safety

When working near electrical lines or equipment, avoid direct or indirect contact. Direct contact is body contact. Indirect contact is when the body touches or is in dangerous proximity to any object that is in contact with energized systems. Always assume lines are "live" and carry high voltage. Electrical lines can only be considered "dead" when verified by licensed electricians from the utilities department, and proper lockout and tagout has been performed.

Employees shall not position any aerial lifts closer than ten (10) feet to a power line that carries up to fifty (50) kilovolts. For each kilovolt over 50, add four (4) inches.

Employees are to be trained concerning the hazards and precautions of working near power lines.

Ensure posted warning placards are in place concerning electrical lines.

If the operator is unable to assess the clearances while operating the aerial lift, then a "spotter" must be used to observe the clearances and warn the operator.

Training

Aerial lift operators shall be trained and certified to use the various lifts on the jobsites.

All employees operating lifts shall be issued a Gateway Contracting, Inc. operator's card, to be carried at all times on their person, when working on a jobsite. Retraining shall be accomplished annually or when an employee shows a lack of understanding of aerial lift safe operating procedures.

Section XII

Confined Space Program

I. OBJECTIVE

The purpose of this Confined Space Program is to set procedures that will ensure workers safe entry into confined spaces and permit-required confined spaces to perform routine tasks associated with their employment. This procedure is designed to provide the minimum safety requirements in accordance with the Occupational Safety and Health Administration's (OSHA) Confined Space Standard, 1910.146.

II. BACKGROUND

A confined space is defined as any location that has limited openings for entry and egress, is not intended for continuous employee occupancy, and is so enclosed that natural ventilation may not reduce air contaminants to levels below the threshold limit value (TLV). Examples of confined spaces include: manholes, stacks, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. Entry into confined spaces without proper precautions could result in injury, impairment, or death due to:

- A. An atmosphere that is flammable or explosive;
- B. Lack of sufficient oxygen to support life;
- C. Contact with or inhalation of toxic materials; or
- D. General safety or work area hazards such as steam or high pressure materials.

III. ASSIGNMENT OF RESPONSIBILITY

A. Employer

In administering this Confined Space Program, Gateway Contracting, Inc. will:

1. Monitor the effectiveness of the program.
2. Provide atmospheric testing and equipment as needed.
3. Provide personal protective equipment as needed.
4. Provide training to affected employees and supervisors.
5. Provide technical assistance as needed.
6. Preview and update the program on at least an annual basis or as needed.

B. Program Manager

Steve Mason is responsible for managing the Confined Space Program, and shall:

1. Ensure that a list of confined spaces at all Gateway Contracting Inc. worksites is maintained.
2. Ensure that canceled permits are reviewed for lessons learned.
3. Ensure training of personnel is conducted and documented.
4. Coordinate with outside responders.
5. Ensure that equipment complies with the standards.
6. Ensure that the supervisor in charge of confined space work shall:
 - a. Ensure requirements for entry have been completed before entry is authorized.
 - b. Ensure that personnel qualified and trained in confined space entry procedures perform space monitoring.
 - c. Ensure a list of monitoring equipment and personnel qualified to operate the equipment is maintained.
 - d. Ensure that the rescue team has simulated a rescue in a confined space within the past twelve (12) months.
 - e. Know the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure.
 - f. Fill out a permit.
 - g. Determine the entry requirements.
 - h. Require a permit review and signature from the authorized Entry Supervisor.
 - i. Notify all involved employees of the permit requirements.
 - j. Post the permit in a conspicuous location near the job.
 - k. Renew the permit or have it reissued as needed (a new permit is required every shift).
 - l. Determine the number of Attendants required to perform the work.
 - m. Ensure all Attendant(s) know how to communicate with the entrants and how to obtain assistance.
 - n. Post any required barriers and signs.
 - o. Remain alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment).
 - p. Change and reissue the permit, or issue a new permit as necessary.
 - q. Ensure periodic atmospheric monitoring is done according to permit requirements.
 - r. Ensure that personnel doing the work and all support personnel adhere to permit requirements.
 - s. Ensure the permit is canceled with the work is done.
 - t. Ensure the confined space is safely closed and all workers are cleared from the area.

C. Entry Supervisors

Designated supervisors shall serve as the Entry Supervisor(s), and shall be qualified and authorized to approved confined space entry permits. The Entry Supervisor(s) shall be responsible for:

1. Determining if conditions are acceptable for entry.
2. Authorizing entry and overseeing entry operations.
3. Terminating entry procedures as required.
4. Serving as an Attendant, as long as the person is trained and equipped appropriately for that role.
5. Ensuring measures are in place to keep unauthorized personnel clear of the area.
6. Checking the work at least twice a shift to verify and document permit requirements are being observed (more frequent checks shall be made if operations or conditions are anticipated that could affect permit requirements).
7. Ensuring that necessary information on chemical hazards is kept at the worksite for the employees or rescue team.
8. Ensuring a rescue team is available and instructed in their rescue duties (i.e., an onsite team or a prearranged outside rescue service).
9. Ensuring the rescue team members has current certification in first aid and cardiopulmonary resuscitation (CPR).

D. Attendants

Designated employees shall function as an Attendant(s) and shall be stationed outside of the confined workspace. The Attendant(s) shall:

1. Be knowledgeable of, and be able to recognize potential confined space hazards.
2. Maintain a sign-in/sign-out log with a count of all persons in the confined space, and ensure all entrants sign in and out.
3. Monitor surrounding activities to ensure the safety of personnel.
4. Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
5. Order personnel to evacuate the confined space if he/she:
 - a. Observes a condition which is not allowed on the entry permit;
 - b. Notices the entrants acting strangely, possibly as a result of exposure to hazardous substances;
 - c. Notices a situation outside the confined space which could endanger personnel;
 - d. Notices a hazard within the confined space that has not been previously recognized or taken into consideration;

- e. Must leave his/her work station; or
 - f. Must focus attention on the rescue of personnel in some other confined space that he/she is monitoring.
6. Immediately call Fire/Rescue (911) if crew rescue becomes necessary.
 7. Keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of an unauthorized entry.
 8. Guide Fire/Rescue personnel to the confined space.

E. Entrants/Affected Employees

Employees who are granted permission to enter a confined space shall:

1. Read and observe the entry permit requirements.
2. Remain alert to the hazards that could be encountered while in the confined space.
3. Properly use the personal protective equipment that is required by the permit.
4. Immediately exit the confined space when:
 - a. They are ordered to do so by an authorized person;
 - b. They notice or recognize signs or symptoms of exposure;
 - c. A prohibited condition exists; or
 - d. The automatic alarm system sounds.
5. Alert Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist.

IV. TRAINING

Gateway Contracting Inc. shall provide training so that all employees whose work is regulated by this Confined Space Program acquire the understanding, knowledge, and skills necessary for the safe performance of their duties in confined spaces.

A. Training Frequency

Responsible Person shall provide training to each affected employee:

1. Before the employee is first assigned duties within a confined space;
2. Before there is a change in assigned duties;
3. When there is a change in permit space operations that presents a hazard for which an employee has not been trained; and
4. When Gateway Contracting Inc. has reason to believe that there are deviations from the confined space entry procedures required in this

program, or that there are inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required in this program, and shall introduce new or revised procedures, as necessary, for compliance with this program.

B. General Training

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

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

Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions.

C. Specific Training

1. Training for atmospheric monitoring personnel shall include proper use of monitoring instruments, including instruction on the following:
 - a. Proper use of the equipment;
 - b. Calibration of equipment;
 - c. Sampling strategies and techniques; and
 - d. Exposure limits (PELs, TLVs, LELs, UELs, etc.).
2. Training for Attendants shall include the following:

- a. Procedures for summoning rescue or other emergency services; and
- b. Proper utilization of equipment used for communicating with entry and emergency/rescue personnel.

D. Verification of Training

Steve Mason shall conduct a periodic assessment of the effectiveness of employee training. Training sessions shall be repeated as often as necessary to maintain an acceptable level of personnel competence.

V. IDENTIFICATION OF HAZARDS AND EVALUATION OF CONFINED SPACES

A. Survey

Steve Mason or his designee shall ensure a survey of the worksite is conducted to identify confined spaces. This survey can be partially completed from initial and continuing site characterizations, as well as other available data (i.e., blueprints and job safety analyses). The purpose of the survey is to develop an inventory of those locations and/or equipment at Gateway Contracting, Inc. that meet the definition of a confined space. This information shall be communicated to personnel, and appropriate confined space procedures shall be followed prior to entry. The initial surveys shall include air monitoring to determine the air quality in the confined spaces. Steve Mason or his designee shall evaluate the potential for the following situations:

1. Flammable or explosive potential;
2. Oxygen deficiency; and
3. Presence of toxic and corrosive material.

B. Hazard Reevaluation

Steve Mason or his designee shall identify and reevaluate hazards based on possible changes in activities or other physical or environmental conditions that could adversely affect work. A master inventory of confined spaces shall be maintained. Steve Mason or his designee will route any change in designation of a confined space to all affected personnel.

C. Pre-Entry Hazard Assessment

Steve Mason or his designee shall complete a hazard assessment prior to any entry into a confined space. The hazard assessment should identify:

1. The sequence of work to be performed in the confined space;

2. The specific hazards known or anticipated; and
3. The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level.

No entry shall be permitted until the hazard assessment has been reviewed and discussed by all persons engaged in the activity. Personnel who are to enter confined spaces shall be informed of known or potential hazards associated with said confined spaces.

D. Hazard Controls

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

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

1. Engineering Controls

Engineering controls are those controls that eliminate or reduce the hazard through implementation of sound engineering practices. Ventilation is one of the most common engineering controls used in confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space shall be ventilated until the atmosphere is within the acceptable ranges. Ventilation shall be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range. When ventilation is not possible or feasible, Steve Mason or his designee shall determine alternate protective measures or methods to remove air contaminants and protect occupants prior to authorizing entry.

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

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

2. Work Practice (Administrative) Controls

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

3. Personal Protective Equipment (PPE)

If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE should be used. Steve Mason or his designee shall determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable standards shall be selected in accordance with the requirements of the job to be performed.

VI. ENTRY PERMITS

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

A. Key Elements of Entry Permits

A standard entry permit shall contain the following items:

1. Space to be entered.
2. Purpose of entry.
3. Date and authorized duration of the entry permit.
4. Name of authorized entrants within the permit space.
5. Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems).
6. Name(s) of personnel serving as Attendant(s) for the permit duration.
7. Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry.
8. Hazards of the permit space to be entered.
9. Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces).

10. Acceptable entry conditions.
11. Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed.
12. Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
13. Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry.
14. Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue).
15. Other information necessary for the circumstances of the particular confined space that ensures employee safety.
16. Additional permits, such as for hot work that have been issued to authorize work on the permit space.

B. Permit Scope and Duration

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

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

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

VII. ENTRY PROCEDURES

When entry into a confined space is necessary, the Entry Supervisor shall initiate entry procedures, including the completion of a confined space entry permit. Entry into a confined space shall follow the standard entry procedure below.

A. Prior to Entry

The entire confined space entry permit shall be completed before a standard entry. Entry shall be allowed only when all requirements of the permit are met and it is reviewed and signed by an Entry Supervisor. The following conditions must be met prior to standard entry:

1. Affected personnel shall be trained to establish proficiency in the duties that will be performed within the confined space.
2. The internal atmosphere within the confined space shall be tested by Entry Supervisor with a calibrated, direct-reading instrument.
3. Personnel shall be provided with necessary PPE as determined by the Entry Supervisor.
4. Atmospheric monitoring shall take place during the entry. If a hazardous atmosphere is detected during entry:
 - a. Personnel within the confined space shall be evacuated by the Attendant(s) or Entry Supervisor until the space can be evaluated by the Entry Supervisor to determine how the hazardous atmosphere developed; and
 - b. Controls shall be put in place to protect employees before reentry.

B. Opening a Confined Space

Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed. When entrance covers are removed, a railing, temporary cover, or other temporary barrier that will prevent anyone from falling through the opening shall promptly guard the opening. This barrier or cover shall protect each employee working in the space from foreign objects entering the space. If it is in a traffic area, adequate barriers shall be erected.

C. Atmospheric Testing

Atmospheric test data is required prior to entry into a confined space. Atmospheric testing is required for two distinct purposes: (1) evaluation of the hazards of the permit space, and (2) verification that acceptable conditions exist for entry into that space. If a person must go into the space to obtain the needed data, then Standard Confined Space Entry Procedures shall be followed. Before entry into a confined space, the Entry Supervisor shall conduct testing for hazardous atmospheres. The internal atmosphere shall be tested with a calibrated, direct-reading instrument for oxygen, flammable gases and vapors, and potential toxic air contaminants, in that order.

Testing equipment used in specialty areas shall be listed or approved for use in such areas by the Entry Supervisor. A nationally recognized laboratory, such as

Underwriters Laboratories or Factory Mutual Systems, shall approve all testing equipment.

1. Evaluation Testing

The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity. The analysis shall identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data and development of the entry procedure should involve a technically qualified professional (i.e., consultant, certified industrial hygienist, registered safety engineer, or certified safety professional).

2. Verification Testing

A confined space that may contain a hazardous atmosphere shall be tested for residues of all identified or suspected contaminants. The evaluation testing should be conducted with specified equipment to determine that residual concentrations at the time of testing and entry are within acceptable limits. The person performing the tests on the permit shall record results of testing. The atmosphere shall be periodically retested (frequency to be determined by the Entry Supervisor). to verify that atmospheric conditions remain within acceptable entry parameters.

3. Acceptable Limits

The atmosphere of the confined spaces shall be considered to be within acceptable limits when the following conditions are maintained:

- a. Oxygen: 19.5 percent to 23.5 percent;
- b. Flammability: less than 10 percent of the Lower Flammable Limit (LFL); and
- c. Toxicity: less than recognized American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits or other published exposure levels [i.e., OSHA Permissible Exposure Limits (PELs) or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)].

D. Isolation and Lockout/Tagout Safeguards

All energy sources that are potentially hazardous to confined space entrants shall be secured, relieved, disconnected, and/or restrained before personnel are permitted to enter the confined space. Equipment systems or processes shall be locked out and/or tagged out as required by Gateway Contracting, Inc.

Lockout/Tagout Program [which complies with OSHA's 29 CFR 1910-147 and American National Standards Institute (ANSI) Z244.1-1982, Lockout/Tagout of Energy Sources] prior to permitting entry into the confined space. In confined spaces where complete isolation is not possible, Steve Mason or his designee shall evaluate the situation and make provisions for a rigorous isolation as practical. Special precautions shall be taken when entering double-walled, jacketed, or internally insulated confined spaces that may discharge hazardous material through the vessel's internal wall.

Where there is a need to test, position, or activate equipment by temporarily removing the lock or tag or both, a procedure shall be developed and implemented to control hazards to the occupants. Any removal of locks, tags, or other protective measures shall be done in accordance with the Gateway Contracting, Inc. Lockout/Tagout Program.

E. Ingress/Egress Safeguards

Means for safe entry and exit shall be provided for confined spaces. Each entry and exit points shall be evaluated by the Entry Supervisor to determine the most effective methods and equipment that will enable employees to safely enter and exit the confined space.

Appropriate retrieval equipment or methods shall be used whenever a person enters a confined space. Use of retrieval equipment may be waived by the Entry Supervisor if use of the equipment increases the overall risks of entry or does not contribute to the rescue. A mechanical device shall be available to retrieve personnel from vertical confined spaces greater than five (5) feet in depth.

F. Warning Signs and Symbols

All confined spaces that could be inadvertently entered shall have signs identifying them as confined spaces. Signs shall be maintained in a legible condition. The signs shall contain a warning that a permit is required before entry. Accesses to all confined spaces shall be prominently marked.

VIII. EMERGENCY RESPONSE

A. Emergency Response Plan

The Entry Supervisor shall maintain a written plan of action that has provisions for conducting a timely rescue of individuals within a confined space, should an emergency arise. The written plan shall be kept onsite where the confined space work is being conducted. All affected personnel shall be trained on the Emergency Response Plan.

B. Retrieval Systems and Methods of Non-Entry Rescue

Retrieval systems shall be available and ready when an authorized person enters a permit space, unless such equipment increases the overall risk of entry, or the equipment would not contribute to the rescue of the entrant. Retrieval systems shall have a chest or full-body harness and a retrieval line attached at the center of the back near shoulder level or above the head. If harnesses are not feasible, or would create a greater hazard, wristlets may be used in lieu of the harness. The retrieval line shall be firmly fastened outside the space so that rescue can begin as soon as anyone is aware that retrieval is necessary. A mechanical device shall be available to retrieve personnel from vertical confined spaces more than five (5) feet deep. **This does not apply to any work performed on a Navy military installation. All rescues shall be performed by on base rescue trained personnel.**

Section XIII

Compressed Gas Cylinders

These are the requirements for practices designed and implemented to protect Gateway Contracting, Inc. employees from the hazards of compressed gases as defined by OSHA in 29 CFR 1910, the National Fire Protection Association (NFPA) and the Compressed Gas Association (CGA).

A. SCOPE

This program is applicable to all Gateway Contracting, Inc. employees in their day-to-day operations, including other contractors, vendors and visitors. Compressed gas cylinders present an accident hazard of high magnitude because of the very large amounts of energy stored therein. Therefore, it is essential that all employees who store, handle or use such items be thoroughly familiar with procedures and safety requirements relating to their use.

Users of compressed gas should become familiar with the properties and inherent hazards of the products they use. Valuable information pertaining to each specific gas is contained within its product labeling and Material Safety Data Sheet. Please read this information and inform your co-workers of the importance of understanding and applying the precautions established within the available safety literature.

B. DEFINITIONS

1. **Compressed gas** - Any gas or mixture of gases in a container having a pressure exceeding 40 psia at 70°F (21.1°C), or regardless of the pressure at 70°F (21.1°C), having a pressure exceeding 104 psia at 130°F (54.4°C), or any liquid having an absolute vapor pressure exceeding 40 psia at 100°F (37.8°C).
2. **Corrosive gas** - A gas that when in contact with living tissue causes destruction of the tissue by chemical action. This term shall not refer to action on inanimate surfaces.
3. **Cryogenic liquids** - A cryogenic liquid is a liquid that has a boiling point colder than minus 150°F (minus 65.5°C) at 14.7 psia.
4. **Cylinder** - Generally a compressed gas container having a maximum water capacity of 1,000 lbs. (453.6 kg.). This is approximately the equivalent of 120 gallons (454.2 L).
5. **Flammable gas** - A gas is considered flammable when either a mixture of 13 percent or less (by volume) with air forms a flammable mixture or the flammable range with air is wider than 12 percent regardless of the lower

limit. These limits shall be determined at atmospheric temperature and pressure.

6. **Gas pressure** - The force exerted by a gas on its surroundings. In the United States, gas pressure is commonly designated in pounds per square inch (psi). The term **psia** refers to absolute pressure. Absolute pressure is based on a zero reference point, the perfect vacuum.
7. **Gauge pressure** - The pressure above or below local atmospheric pressure. Therefore, absolute pressure minus local atmospheric pressure equals gauge pressure. Gauge pressure is commonly designated by the abbreviation **psig**.
8. **Handling** - Moving, connecting or disconnecting a compressed or liquefied gas container under normal conditions of use.
9. **Highly toxic gas** - A compressed gas that has a median lethal concentration (LC50) in air of 200 parts per million or less by volume of gas or vapor when administered by continuous inhalation for an hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.
10. **Inert gas** - A term used to describe a variety of gases which are chemically inactive.
11. **Liquid cylinder** - A pressurized double-walled and insulated container used to hold either cryogenic liquefied gas or refrigerated liquefied gas.
12. **Manifold** - A gas distribution system, which transfers product through multiple outlets/inlets to compressed gas containers.
13. **Material Safety Data Sheet (MSDS)** - Written or printed material concerning a hazardous material prepared in accordance with the OSHA provisions of 29 CFR 1910.1200.
14. **Pressure regulator** - A pressure and/or temperature activated device used to prevent the pressure from rising above a predetermined maximum, thereby preventing rupture of a normally charged cylinder when subjected to a standard fire test.
15. **Toxic gas** - A compressed gas that has a median lethal concentration (LC 50) of more than 200 and less than 2,000 parts per million by volume of gas or vapor when administered by continuous inhalation for an hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.
16. **Valve protection cap** - A rigid removable cover provided for container valve protection during handling, transportation and storage.

C. RESPONSIBILITIES

- 1. Supervisors:** Supervisors are responsible for ensuring that only trained employees handle or use compressed gas cylinders. The supervisor shall instruct his/her employees as to the contents of this policy and make frequent checks to ensure understanding and compliance. Supervisors shall immediately intervene in all instances involving unsafe acts or work practices. Supervisors must verify that compatible materials (valves, hoses, pipes, etc.) are used with compatible gases.
- 2. Users:** Containers are generally provided by the gas manufacturer as a convenient device for storing and delivering a gaseous product to the user. The user is responsible for the safe use of the container and its contents and for returning the container to the gas manufacturer or distributor in the same safe condition as it was received. It is the responsibility of every employee to ensure that he/she abides by the rules and regulations set forth in this policy. The employee shall further ensure that the equipment is in proper working condition and report any discrepancies to the supervisor.

D. CARE AND USE

- All cylinders shall be inspected for damage (i.e., dents, gouges, evidence of leakage or cracks) before use. If any damage is found, the cylinder shall be tagged "out of service" and returned to the manufacturer or distributor. The gas manufacturer or distributor must hydrostatically test compressed gas cylinders every five years. Check the cylinder upon arrival for the test date (usually stamped on the neck of the cylinder). Do not accept a cylinder if the most recent test date is more than five years old.
- The user must know the contents of the cylinder. Do not use a cylinder if you cannot quickly determine its contents by wording on either the cylinder or a tag securely attached to the cylinder. If the tag has become detached or the label has been defaced, do not use the cylinder. Do not rely on color-coding of the cylinder. Different manufacturers use different color codes and there is no standardized system of color-coding.
- Know the properties of the contents. Knowledge of the properties of cylinder contents is essential; be aware of the flammability, corrosiveness or oxidation potential as well as the physiological properties (i.e., toxic, anesthetic or irritating).
- Handle all cylinders carefully. Careless handling may damage cylinders and valves. Install valve and dust covers when cylinders are not in use. Use cylinders for no purpose other than for containing compressed gases; handle them with the same care whether they are full or empty.

5. Secure all cylinders, whether in use or in storage, full or empty, by using a chain or other effective fastening device.
6. Move cylinders safely. Move cylinders from one location to another by hand-trucks. Secure the cylinder to the hand-truck while moving it. It is easy to lose control of a cylinder while sliding or rolling it.
7. Keep all cylinders in a vertical orientation at all times. Some gases/cylinders will pose problems if put in a horizontal position. If all cylinders are treated the same way, these hazards can be avoided.
8. Do not tamper with cylinder valves or any part of a valve, such as a safety nut or stem-packing nut. If you are unfamiliar with the valves, please seek competent aid. When removing the safety nut instead of the outlet cap, for example, you will not be able to stop the flow of gas.
9. Use cylinders with appropriate equipment. Do not force connections or use unauthorized adapters. Never use a cylinder without a regulator.
10. Close cylinder valves. Always close the cylinder valve when the cylinder is not in use or when it is empty. Replace dust covers and dust caps.
11. Oxygen cylinders will support the rapid combustion of most materials. Flammable materials contaminated by oxygen, especially materials such as oil, paint or grease, become extremely dangerous. Oxygen is intended for use in welding. It is not intended for breathing and must not be substituted for air used in ventilation systems. Under no circumstances use oxygen as a substitute for compressed air or for any other unauthorized purpose. An explosion may result.
12. Never oil or grease a regulator. If oil or grease is found on an oxygen cylinder or regulator, it must be taken out of service immediately and the cylinder returned to the supplier.
13. Before attempting to place regulators or other fittings on a cylinder, be sure that the threads on the cylinder match those on the fittings. The type of thread, number of threads per inch and the hand of the thread must match to ensure a satisfactory seal. If the fittings are hard to turn, do not force them; instead, check the threads.
14. Open cylinder valves slowly so the gas will not be released suddenly into the regulators. If the valve is hard to open, keep the valve outlet pointed away from your body while you apply greater force. Operate valves fitted with hand wheels only by hand. Do not use cheaters or pipes. Cylinders that do not have fixed hand wheels will be equipped with keys, handles or nonadjustable wrenches on the valve stems during the time they are in service.

15. Before removing a regulator from a cylinder, close the control valves and allow the gas to escape from the regulator. Welders shall not leave an area with regulators or lines pressurized.
16. On oxygen cylinders, do not use a regulator that has been previously used for oil-pumped gases or any combustible gases. The gauges on oxygen regulators must be marked USE NO OIL.
17. Acetylene is a colorless, flammable gas with a distinctive garlic-like odor. A mixture of this gas with oxygen or air in a confined area will explode when brought in contact with a flame or other source of ignition. A pressure-reducing regulator must be used when drawing acetylene from a cylinder. Never adjust the regulator to obtain a delivery pressure greater than 15 psig.
18. Under certain conditions, acetylene readily forms explosive compounds with copper, silver and mercury. Contact should be avoided between acetylene and these metals, their salts, compounds and high-concentration alloys.
19. Only cylinders that are in use should be located in the lab or work area. Other cylinders should be stored in a designated storage area.

E. STORAGE

1. All cylinders, whether in use or in storage, empty or full, shall be secured by a chain or other effective fastening device preventing the cylinder from falling over.
2. Gases may represent a hazard because they are capable of being:
 - Flammable
 - Asphyxiate (Inert)
 - Oxidizer
 - Corrosive
 - Toxic
 - Highly Toxic
 - Extremely Cold (Cryogenic)
 - Under High Pressure

Some gases may combine several of the above hazards.

3. Do not store cylinders in locations where their temperatures may rise above 125°F (51.7°C) or near radiators or other sources of heat because high temperatures greatly increase the gas pressures in the cylinders. Many cylinders have fusible safety plugs that may release the contents when high temperatures or pressures exist in the cylinder. Do not store them where there is danger of accidental damage or in areas where they will be subjected to

corrosive chemicals or similar damaging materials. Do not store cylinders of flammable gases near electrical wires, batteries or other conductors or sources of electricity. Empty cylinders must be plainly marked EMPTY and stored separately from full containers. Cylinders stored in the open must be adequately protected from extreme heat and cold. Cold weather usually increases the brittleness of the cylinder metal, and if brittle cylinders are handled roughly, they can rupture. Remove accumulated ice or snow to prevent cylinders from rusting. When gas cylinders are stored indoors, ventilate the area to prevent the accumulation of flammable or asphyxiating gases in the atmosphere. Cylinders shall not be kept in unventilated enclosures.

4. Cryogenic cylinders must be fitted with stainless steel plumbing only.
5. Cylinders when stored (either inside or outside) shall not obstruct exit routes or other areas.
6. All cylinders in storage shall have their valves closed. Valve protection caps are used on the cylinder and are designed to accept a cap. Caps shall always be in place and hand tight except when cylinders are in use or connected for use. All cylinders shall be stored valve end up.
7. Oxygen cylinders shall not be stored within 20 feet of highly combustible material (especially oil and grease), or within 20 feet of reserve stocks of acetylene or other fuel gas cylinders, or near any other substance likely to cause or accelerate fire. The only exception to this rule is when oxygen and acetylene are on a frequently used welding cart with regulator and hoses attached. If the cart is not used several times a week, the regulators must be removed and the cylinders must be properly stored.

Section XIV

Forklift Safety Program

This program applies to the operation of all powered industrial trucks, forklifts, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines by Gateway Contracting, Inc. employees. Only trained operators will be allowed to operate any equipment.

Pre-Use Inspection

Prior to the operation of any powered industrial truck the Pre-Use Inspection Checklist found in Appendix A must be completed. This applies at the beginning of every work period, and whenever a new equipment operator takes control of the powered industrial truck.

Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) must be reported for immediate repair. They must also be locked and tagged, and taken out of service.

Operation

- Operators must wear seatbelts at all times.
- Powered industrial truck operators must wear hard hats in areas where overhead hazards exist.
- Operators must sound the horn and use extreme caution when meeting pedestrians, making turns, and cornering.
- Passengers are not allowed to ride on an industrial truck, unless the truck has an extra seat that allows the passenger to buckle-up while riding.
- Arms or legs may not be placed between the uprights of the mast or outside the running lines of the truck.
- Persons are not allowed to stand or pass under any elevated portion of a truck.
- If powered industrial trucks are used to elevate persons then an appropriate man lift platform (cage with standard rails and toe-boards) that is attached to the mast must be used.
- Trucks must not be driven up to anyone standing in front of a fixed object.
- Paths of travel must be maintained free from obstructions.
- A safe distance must be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Trucks must not be used for opening or closing freight doors.
- Maintain sufficient headroom under overhead installations such as: lights, pipes, sprinkler systems, etc.
- An overhead guard must be used as protection against falling objects.
- A load backrest extension must be used whenever necessary to minimize the possibility of the load or part of it from falling toward the rear.

- Lift capacity must be marked on all powered industrial trucks. Operators must assure the load does not exceed rated weight limits.
- Rail cars and trailers must be parked squarely to the loading area and have wheels chocked in place. Operators must follow established docking/undocking procedures.
- When a powered industrial truck is left unattended (more than 25ft. away or out of sight) load engaging means must be fully lowered, controls neutralized, power shut off, and brakes set. Wheels must be blocked if the truck is parked on an incline.
- All powered industrial trucks (with the exception of pallet jacks) must be equipped with a multi-purpose dry chemical fire extinguisher.
- The manufacturer must approve all modifications, and new rated load capacities determined and posted on the truck. Written approval is required.
- Operators must report all accidents, regardless of fault and severity, to their Supervisor.

Loading

- Only handle loads within the rated capacity of the truck.
- Loads should be safely arranged, stable, and centered – always use caution when handling loads. Adjust long or high (including multiple-tiered) loads that may affect capacity.
- Trucks equipped with attachments must be operated as partially loaded trucks even when not handling a load.
- A load engaging means must be placed under the load as far as possible. The mast must be carefully tilted backward to stabilize the load.
- Use extreme care when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated is prohibited except to pick up a load. An elevated load may not be tilted forward except when the load is in a deposit position. When stacking or tiering, use only enough backward tilt to stabilize the load.

Trucks and Railroad Cars

- Check the flooring of trucks, trailers, and railroad cars for breaks and weakness before driving onto them.
- The brakes of highway trucks must be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.
- Wheel stops or other recognized positive protection must be provided to prevent railroad cars from moving during loading or unloading operations.
- Fixed jacks are necessary, and must be deployed, to support a semi trailer and prevent upending during loading or unloading when the trailer is not coupled to a tractor.
- Positive protection must be provided to prevent railroad cars from being moved while dock boards or bridge plates are in position.

Traveling

- All traffic regulations must be observed, including authorized speed limits and yielding to pedestrians. A safe distance must be maintained, approximately three truck lengths from the truck ahead, and the truck must be kept under control at all times.
- The right of way must be yielded to ambulances, fire trucks, or other vehicles in emergencies.
- Do not pass other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations.
- The driver must slow down and sound the horn at cross aisles and other locations where vision is obstructed.
- If the load being carried obstructs forward view, the driver must travel with the load trailing.
- Loads must be tilted back and carried no more than four inches above the ground.
- Railroad tracks must be crossed diagonally wherever possible. Parking closer than eight feet from the center of railroad tracks is prohibited.
- The driver must look in the direction of and keep a clear view of the path of travel.
- Grades must be ascended and descended slowly. Position the load uphill relative to the operator when ascending or descending grades.
- Stunt driving and horseplay are prohibited.
- When loading rail cars and trailers, dock plates must be used. And, dock board or bridge plates must be properly secured before they are driven over. Dock board or bridge plates must be driven over carefully and slowly and their rated capacity never exceeded.
- Avoid running over loose objects on the roadway surface.
- While negotiating turns, reduce speed and turn the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel must be turned at a moderate, even rate.

Fueling

- Fuel tanks may not be filled while the engine is running. Avoid spillage.
- Spillage of oil or fuel must be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No truck can be operated with a leak in the fuel system.
- Open flames are not to be used when checking electrolyte levels in storage batteries, or gasoline levels in fuel tanks.

Changing and Charging Storage Batteries

- Battery charging installations must be located in areas designated for that purpose.
- Facilities must be provided for: flushing and neutralizing spilled electrolyte, fire protection, protection of charging apparatus from damage by trucks, adequate ventilation for dispersal of fumes from gassing batteries.
- A conveyor, overhead hoist, or equivalent material handling equipment must be provided for handling batteries.
- Reinstalled batteries must be properly positioned and secured in the truck.
- A carbon filter or siphon must be provided for handling electrolyte.
- When charging batteries, acid must be poured into water. Not water into acid.

- Trucks must be properly positioned and brake applied before attempting to change or charge batteries.
- Care must be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) must be open to dissipate heat.
- Smoking is prohibited in the charging area.
- Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- Tools and other metallic objects must be kept away from the top of uncovered batteries.
- Avoid cell phone use.

Maintenance

- Any powered industrial truck that is not in safe operating condition must be removed from service. Authorized personnel must make all repairs.
- All operators shall carry a certification card or a card sticker that indicates they are qualified operators of Powered Industrial Trucks.

Training Requirements

- Employees who are authorized to operate powered industrial trucks must receive training prior to engaging in their duties, and must be re-certified every three years to ensure they remain a qualified operator.

Initial Training

- Receive instruction on the intended purpose and function of each control.
- Prior to operating any Powered Industrial Truck the trainee will read and understand the manufacturer's operating instruction(s) and user's safety rules, or receive training by a qualified person on the contents of the manufacturer's operating instruction(s) and users safety rules.
- Be informed of the Powered Industrial Truck operating limitations and restrictions as defined by the manufacturer.
- Understand by reading or having a qualified person explain all decals, warnings, and instructions displayed on the Powered Industrial Truck.
- During operational training, trainees may operate a powered industrial truck only under the direct supervision of authorized trainers, and where such operation does not endanger the trainee or other employees.
- All training and evaluation must be completed before an operator is permitted to use a powered industrial truck without continual and close supervision.

Re-Training Must Be Provided When:

- The operator has been observed operating the vehicle in an unsafe manner.
- The operator has been involved in an accident or near-miss incident.
- The powered industrial truck operators appear unfamiliar with their equipment, procedures, or appear to have inadequate knowledge concerning what this program requires.

- The operator has received an evaluation that reveals that the operator is not operating the truck safely.
- A condition in the workplace changes in a manner that could affect safe operation of the truck.
- There is a change in job assignments, change in equipment or process, or whenever there is a change in the Forklift Safety Program.

Appendix A

Daily Pre-Use Inspection Checklist

1. Inspect the mast for broken or cracked weld points and any other obvious damage.
2. Ensure roller tracks are greased and that chains are free to travel.
3. Forks must be equally spaced and free from cracks along the blade and at the heels.
4. Check hydraulic fluid levels.
5. Check each hydraulic line and fitting for excessive wear or crimping.
6. Check lift and tilt cylinders for damage or leaking fluid.
7. Inspect mounting hardware on the cylinders.
8. Check tires for excessive wear, splitting or missing tire material.
9. Check pneumatic tires for proper pressure indicated on the tires.
10. When applicable, inspect batteries for:
 - a. Cracks or holes.
 - b. Securely sealed cells.
 - c. Frayed cables.
 - d. Broken insulation.
 - e. Tight connections
 - f. Clogged vent caps.

Note: thick nitrile gloves, splash goggles, and long sleeves must be worn when working with batteries.

11. When applicable check propane power supplies for:
 - a. Tanks having cracks, broken weld points, and other damage.
 - b. All valves, nozzles, and hoses secured and not leaking.

Section XV

Excavations

All trenching and excavation work shall be performed under the supervision of a competent person who is trained in the requirements of OSHA 29 CFR 1926 Subpart P (Excavations).

A competent person is defined as one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

The competent person's responsibilities include, but are not limited to the following:

- Trained and knowledgeable about the OSHA excavation standard and other standards which may apply during excavation work.
- Capable of recognizing hazardous conditions and stopping work where necessary to correct or eliminate hazardous conditions.
- Ensure the location of underground installations and utilities before digging.
- Performing daily excavation inspections to ensure employee safety.
- Performing an excavation safety inspection after any event that could alter an excavation, such as a rainstorm.
- Capable of determining the proper protective system to be used during excavation.
- Capable of soil analysis.
- Capable of locating emergency access and egress from an excavation.
- Ensuring the use of required PPE during excavation work.